CITY OF BRIDGEPORT

DOUGLAS COUNTY **WASHINGTON**

WASTEWATER TREATMENT FACILITY OPERATIONS BUILDING RESTORATION - REBID

CITY OFFICIALS

JANET CONKLIN
Mayor

Mike Bjornstad **Jacqueline Hentges**

Esiquio (Zeke) Martinez **Sergio Orozco** **Matthew Schuh**
City Council

Judy Brown
Clerk/Treasurer

Stuart Dezellem
Public Works Director

DEFERRED SUBMITTALS:

- FIRE PROTECTION SYSTEM
- PRE-FABRICATED WOOD TRUSSES

This project is funded through the Washington State Department of Ecology Clean Water State Revolving Fund Program and the City of Bridgeport.

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WASHINGTON 98901 (509) 453-4833

October 2021
G&O #20859

NANCY J. WRIGHT STATE OF WASHINGTON 43805 REGISTERED PROFESSIONAL ENGINEER

10/10/21

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0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

DATE: OCT 2021
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No.	REVISION	DATE	APP'D

NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER
10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
SHEET INDEX

SHEET: G-1
OF: 12
JOB NO.: 20859
DWG: G_IND

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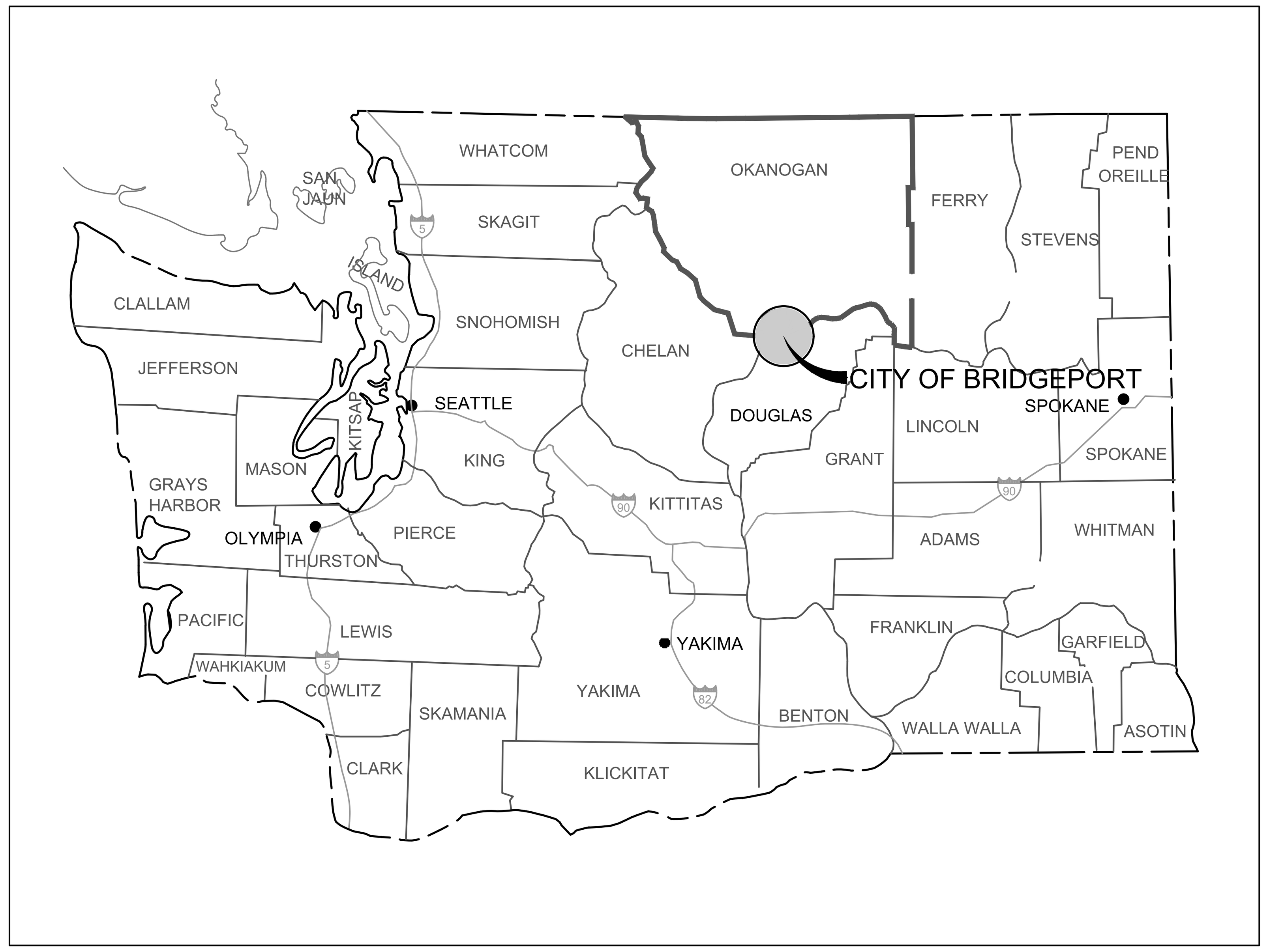


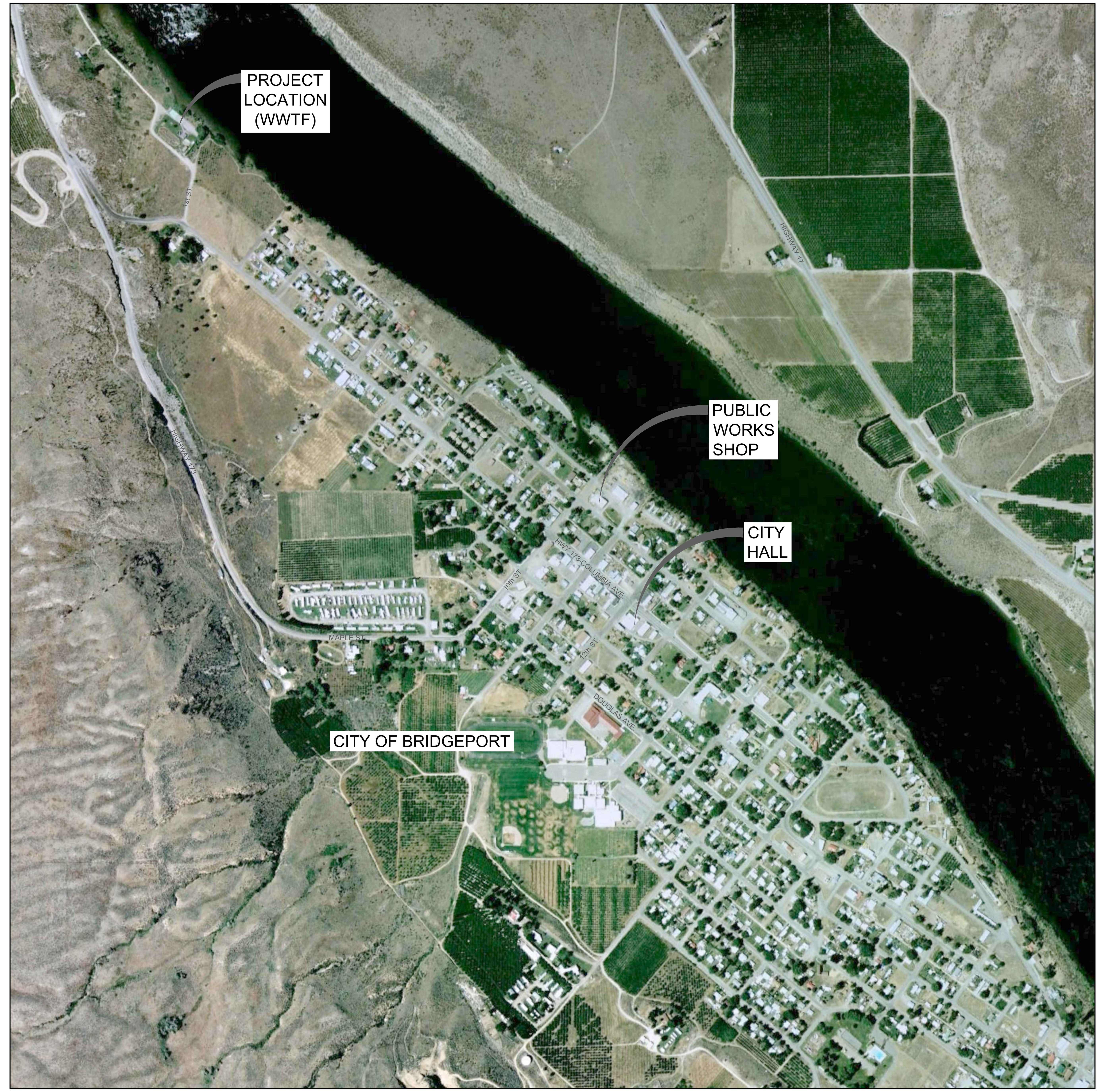
VICINITY MAP

NTS

WWTF ADDRESS:
COLUMBIA AVENUE AND FIRST STREET
BRIDGEPORT, WA. 98813

CITY HALL ADDRESS:
1206 COLUMBIA AVENUE
BRIDGEPORT, WA. 98813

PUBLIC WORKS SHOP ADDRESS:
1013 JEFFERSON AVENUE
BRIDGEPORT, WA. 98813



LOCATION MAP

NTS

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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NANCY J. WATCH
STATE OF WASHINGTON
42805
REGISTERED PROFESSIONAL ENGINEER
10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
VICINITY MAP

SHEET: G-2
OF: 12

JOB NO.: 20859
DWG: G_VICL

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ABBREVIATIONS

AAF	AVERAGE ANNUAL FLOW
AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
ACP	ACOUSTIC PANEL
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALTR	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
ASSY	ASSEMBLY
AVE	AVENUE
AWS	AMERICAN WELDING SOCIETY
BI	BLACK IRON
BLD FLG	BLIND FLANGE
BLDG	BUILDING
BLK	BLOCK
BOD	BOTTOM OF DUCT, BIOCHEMICAL OXYGEN DEMAND
BOW	BOTTOM OF WALL
BTWN	BETWEEN
BVC	BEGIN VERTICAL CURVE
C	CONDUIT
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CD	CEILING DIFFUSER
CDF	CONTROLLED DENSITY FILL
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CLASS
CLAR	CLARIFIER
℄	CENTER LINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTRACTOR
CONV	CONVEYOR
CPLG	COUPLING
CONTIN	CONTINUED
COP	COPPER
CP	CORNER POST
CPEP	CORRUGATED POLYETHYLENE PIPE
CSBC	CRUSHED SURFACING BASE COURSE
CSH	CONCRETE SURFACE HARDENER
CSTC	CRUSHED SURFACING TOP COURSE
CTR	CENTER
CU	COPPER
CX	CONNECT TO EXISTING
D	DRAIN
DI	DUCTILE IRON
DIA	DIAMETER
DIR	DIRECTION
DISCH	DISCHARGE
DIV	DIVISION
DN	DOWN
DO	DISSOLVED OXYGEN
DP	DIFFERENTIAL PRESSURE
E	EAST
EA	EACH
ECC	ECCENTRIC
EFF	EFFLUENT
EG	EXHAUST GRILLE
EL	ELEVATION
ELL	ELBOW OR BEND
ELEC	ELECTRICAL
EMBED	EMBEDMENT
EMERG	EMERGENCY
EXIST	EXISTING
EXP	EXPANSION
EW	EACH WAY
EVCS	END VERTICAL CURVE STATION
FAB	FABRICATED
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FF	FACTORY FINISH, FINISHED FLOOR
FG	FINISHED GRADE
FIG	FIGURE
FIN	FINISHED
FIPT	FEMALE INTERNATIONAL PIPE THREAD
FL	FLANGE
FLN	FLOW LINE
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET
FT^2	SQUARE FEET
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GI	GALVANIZED IRON
GOVT	GOVERNMENT
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRD	GRADE
GRV	GROOVED PIPE OR COUPLING
GSM	GALVANIZED SHEET METAL
GV	GATE VALVE
GWB	GYPSUM WALL BOARD
H	HEIGHT
HB	HOSE BIB
HEX	HEXAGONAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HMA	HOT MIX ASPHALT
HDG	HOT DIPPED GALVANIZED
HR	HOUR
HDPE	HIGH DENSITY POLYETHYLENE
ID	IDENTIFICATION, INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INF	INFLUENT
INV	INVERT
J BOX	JUNCTION BOX
L	LENGTH
LB	POUND
LB/HR	POUNDS PER HOUR
LF	LINEAR FEET
MAG	MAGNETIC
MAH	METAL ACCESS HATCH
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAM PER LITER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MMF	MAXIMUM MONTH FLOW
MO	MID ORDINATE
MOV	MOTOR OPERATED VALVE
N	NORTH
NO.	NUMBER
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OE	OVERHEAD ELECTRICAL
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OHP	OVERHEAD POWER
OZ	OUNCE
PE	PLAIN END
PERF	PERFORATED
PG	PERFORMANCE GRADE
PHF	PEAK HOUR FLOW
PL	PLATE
PLYWD	PLYWOOD
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION, PRIMARY SLUDGE OR PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
QT	QUARTER
QUAD	QUADRANT
RAG	RETURN AIR GRILLE
RAS	RETURN ACTIVATED SLUDGE
RD	ROOF DRAIN
REC	RECOMMENDATION
RED	REDUCER
REINF	REINFORCE
REQD	REQUIRED
RESTL	REINFORCING STEEL
RGF	RECIRCULATING GRAVEL FILTER
RLX	RELOCATE EXISTING
RM	ROOM
RO	ROUGH OPENING
RS	RAW SEWAGE
R/W	RIGHT-OF-WAY
RX	REMOVE EXISTING
S	SOUTH
SC	SCUM
SCH	SCHEDULE
SDG	SMALL DIAMETER GRAVITY
SF	SQUARE FEET
SHT	SHEET
SL	SLOPE
SL	SLUDGE
SOC	SOCKET
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRG	STRONG
SUC	SUSPENDED CEILING
SWD	SIDE WATER DEPTH
TAPD	TAPERED
TB	TOP AND BOTTOM
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
THK	THICK
THRD	THREADED
THRU	THROUGH
TK	TANK
TOB	TOP OF BAFFLE
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOG	TOP OF GROUT
TOS	TOP OF SLAB
TOW	TOP OF WALL
TS	TOTAL SOLIDS
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL
UHMW	ULTRA HIGH MOLECULAR WEIGHT, POLYETHYLENE
UV	ULTRAVIOLET
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIS	VINYL SHEET
VS	VOLATILE SOLIDS
VTR	VENT THROUGH ROOF
W	WIDTH, WEST
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WCO	WALL CLEANOUT
WD	WIDE
W/O	WITHOUT
WRF	WATER RECLAMATION FACILITY
WSL	WATER SURFACE LEVEL
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WWTF	WASTEWATER TREATMENT FACILITY
YH	YARD HYDRANT

GENERAL SYMBOLS

1/4" FT	SLOPE 1/4" PER FOOT
	FLOW DIRECTION (AIR, WATER)
	OPENING
	GROUND
	ASPHALT SECTION
	CONCRETE SECTION
	WATER SURFACE
	ELEVATION REFERENCE POINT
	LEGEND/NOTE CALL OUTS
	PIPE SUPPORT
	ELECTRICAL MAST
	SQUARE SECTION
	PIPE SECTION
@	SPACING CENTER ON CENTER
#	SIZE OF DEFORMED BAR
Ø	DIAMETER
	RECTANGULAR SECTION
∠	ANGLE
W	WIDE-FLANGE SHAPE
C	CHANNEL
ℙ	PLATE
℄	CENTER LINE

EXAMPLE OF SECTION NUMBERING SYSTEM AND PLAN/DRAWING TITLES

FOR DETAILS, SUBSTITUTE DETAIL NUMBER FOR SECTION LETTER

ELEVATION VIEW ON SHEET M99-9 — A / M99-9 — SECTION CUT ON SHEET M99-9

A / M99-9 — SECTION LETTER OR DETAIL NUMBER; SHEET ON WHICH SECTION OR DETAIL APPEARS

ON SHEET M99-9 THIS SECTION IS IDENTIFIED AS: A / M99-1 **SECTION** SCALE: ?"=1'-0" — SECTION LETTER OR DETAIL NUMBER; SHEET FROM WHICH SECTION OR DETAIL WAS TAKEN

A / - — SECTION LETTER OR DETAIL NUMBER; SECTION APPEARS ON SAME DWG AS CUT

A / TYP — SECTION LETTER OR DETAIL NUMBER; SECTION IS TYPICAL TO MANY PLACES

DETAILS ARE REFERENCED IN A SIMILAR MANNER EXCEPT NUMBERS ARE USED INSTEAD OF LETTERS

DRAWING TITLE IDENTIFICATION : **DRAWING TITLE** SCALE: ?"=1'-0"

GENERAL NOTES

1. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN IN LIGHT LINE WEIGHTS OR AS SCREENED BACKGROUND. NEW CONSTRUCTION, STRUCTURES, FACILITIES, AND FEATURES ARE SHOWN IN HEAVY LINE WEIGHTS.
2. MANY OF THE SYMBOLS SHOWN ON THIS LEGEND ARE USED ONLY WHERE THEY PROVIDE CLARITY AND ARE NOT NECESSARILY USED IN ALL APPLICATIONS. SOME CONTRACT DRAWINGS MAY HAVE ADDITIONAL LEGENDS APPLICABLE FOR THAT SPECIFIC DRAWING. SYMBOLS SHOWN ON SPECIFIC DRAWINGS GOVERN.
3. THE CONTRACTOR SHALL VERIFY ALL PLANIMETRIC FEATURES AND DIMENSIONS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
4. ALL DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS REFER TO THE HORIZONTAL AND VERTICAL PROJECTED PLANES, UNLESS OTHERWISE INDICATED.

YARD PIPING ABBREVIATIONS

ALP	AIR LOW PRESSURE
BY	BYPASS
CL	CHLORINE
D	DRAIN
DS	DIGESTED SLUDGE
FE	FINAL EFFLUENT
G	GAS
INF	INFLUENT
ML	MIXED LIQUOR
NPW	NON POTABLE WATER
PDD	PLANT DRAIN DISCHARGE
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
S	SEWER
SAM	SAMPLING LINE
SC	SCUM
SD	STORM DRAIN
SE	SECONDARY EFFLUENT
SHC	SODIUM HYPOCHLORITE
S02	SULFUR DIOXIDE
SPD	SUMP PUMP DISCHARGE
SWD	STORMWATER DISCHARGE
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE

SYMBOL LEGEND

EXISTING	NEW
ASPHALT PAVEMENT	ASPHALT PAVEMENT
	ASPHALT PAVEMENT REPAIR
GRAVEL SURFACING	GRAVEL SURFACING
CONCRETE SURFACING	CONCRETE SURFACING
FENCE	FENCE
DRAIN SERVICE	DRAIN SERVICE
IRRIGATION SERVICE	IRRIGATION SERVICE
NON POTABLE WATER	NON POTABLE WATER
OVERHEAD POWER	OVERHEAD POWER
POTABLE WATER SERVICE	POTABLE WATER SERVICE
SEWER SERVICE	SEWER SERVICE
GATE VALVE	GATE VALVE
BUTTERFLY VALVE	BUTTERFLY VALVE
CHECK VALVE	CHECK VALVE
PLUG VALVE	PLUG VALVE
SOLENOID VALVE	SOLENOID VALVE
BALL VALVE	BALL VALVE
THRUST BLOCK	THRUST BLOCK
UTILITY POLE WITH GUY WIRE	UTILITY POLE WITH GUY WIRE
UTILITY POLE	UTILITY POLE
LUMINARY	LUMINARY (SEE ELECTRICAL)
PULLHOLE (AS NOTED)	PULLHOLE (AS NOTED)
MANHOLE	MANHOLE
FIRE HYDRANT	FIRE HYDRANT
TYPE 1 CATCH BASIN OR CURB INLET	TYPE 1 CATCH BASIN OR CURB INLET
TYPE 2 CATCH BASIN	TYPE 2 CATCH BASIN
CAP	CAP
WATER METER	WATER METER
MONUMENT	MONUMENT
TREES	TREES
BORING AND TEST PIT LOCATIONS	BORING AND TEST PIT LOCATIONS
BUILDINGS	BUILDINGS
20 CONTOUR	20 CONTOUR
YH YARD HYDRANT	YH NON-FREEZE YARD HYDRANT
HB HOSE BIBB	HB NON-FREEZE HOSE BIBB
CO CLEANOUT	CO CLEANOUT
P POWER VAULT	
	COMBINATION AIR RELEASE / AIR VACUUM VALVE ASSEMBLY
	BOLLARD
GRASS	GRASS
LANDSCAPE ROCK	LANDSCAPE ROCK
SP IRRIGATION SPRINKLER	SP IRRIGATION SPRINKLER
IR IRRIGATION VALVE BOX	
SECTION CORNER	
1/4 CORNER	
PROPERTY LINE	
RIGHT-OF-WAY LINE	
SECTION LINE	
QUARTER SECTION LINE	
BOUNDARY LINE	
CENTERLINE OF RIGHT-OF-WAY	
EASEMENT LINE (PROPOSED)	

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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NANCY J. WELCH, WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER 10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

ABBREVIATIONS, GENERAL SYMBOLS, SYMBOL LEGEND, AND GENERAL NOTES

SHEET: G-3
OF: 12

JOB NO.: 20859
DWG: G_ABR_SYM_LEGD

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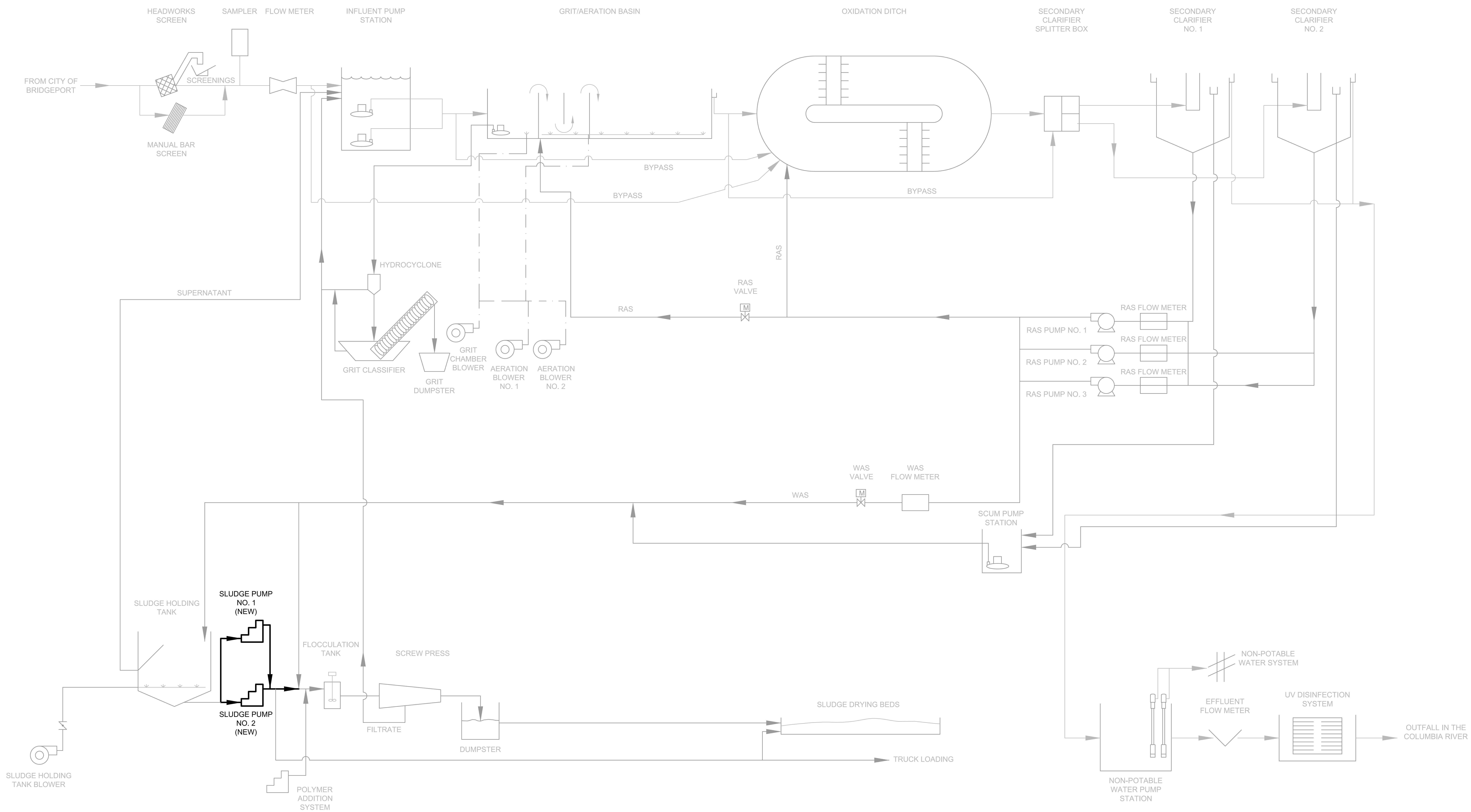

HEADWORKS SCREEN
SAMPLER
FLOW METER
INFLUENT PUMP STATION
GRIT/AERATION BASIN
OXIDATION DITCH
SECONDARY CLARIFIER SPLITTER BOX
SECONDARY CLARIFIER NO. 1
SECONDARY CLARIFIER NO. 2
FROM CITY OF BRIDGEPORT
SCREENINGS
MANUAL BAR SCREEN
BYPASS
BYPASS
BYPASS
RAS
HYDROCYCLONE
SUPERNATANT
RAS VALVE
RAS
RAS FLOW METER
RAS PUMP NO. 1
RAS FLOW METER
RAS PUMP NO. 2
RAS FLOW METER
RAS PUMP NO. 3
GRIT CLASSIFIER
GRIT DUMPSTER
GRIT CHAMBER BLOWER
AERATION BLOWER NO. 1
AERATION BLOWER NO. 2
WAS VALVE
WAS FLOW METER
WAS
SCUM PUMP STATION
SLUDGE HOLDING TANK
SLUDGE PUMP NO. 1 (NEW)
FLOCCULATION TANK
SCREW PRESS
NON-POTABLE WATER SYSTEM
SLUDGE PUMP NO. 2 (NEW)
FILTRATE
DUMPSTER
SLUDGE DRYING BEDS
EFFLUENT FLOW METER
UV DISINFECTION SYSTEM
OUTFALL IN THE COLUMBIA RIVER
TRUCK LOADING
SLUDGE HOLDING TANK BLOWER
POLYMER ADDITION SYSTEM
NON-POTABLE WATER PUMP STATION

PROCESS
AIR
SLUDGE

0 1" 2"
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CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

PROCESS FLOW DIAGRAM

SHEET: G-4
OF: 12

JOB NO.: 20859
DWG: G_PFD

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WWTF Design Criteria

WWTF Design Flows	
Average Annual Flow	0.314 MGD
Maximum Month Flow	0.364 MGD
Maximum Day Flow	0.469 MGD
Peak Hour Flow	1.097 MGD
WWTF Design Loadings	
Maximum Month BOD5	671 lbs/day
Maximum Month TSS	924 lbs/day
Headworks	
Mechanical Fine Screen	
Quantity	1
Type	Helical Perforated Plate
Size Screen Opening	1/4-inch
Screen Diameter	10-inch
Capacity	1.0 MGD (maximum hydraulic capacity)
Motor	2 hp
Influent Flow Meter	
Type	Parshall Flume
Size	3-inch
Capacity	0.0062-1.202 MGD
Depth of Measurement, MMF 0.36 MGD	8.28 inches
Depth of Measurement, PHF 1.1 MGD	17.04 inches
Influent Pump Station	
Wet Well	
Dimensions	6-foot diameter, 20 feet deep
Working Volume	2,100 gal
Pumps	
Quantity	2
Type	Submersible Centrifugal
Capacity, each	800 gpm @ 48 feet TDH
Motor	20 hp
Speed Control	VFD
Level Measurement	1 pressure sensor, 3 floats
Grit/Aeration Basin	
Grit Basin	
Quantity	1
Dimensions	28'Lx8'Wx10' SWD (hopper bottom)
Volume	16,000 gal
Hydraulic Detention Time @ PHF	21 minutes
Grit Basin Blower	
Quantity	1
Type	Positive Displacement
Capacity, each	80 scfm
Discharge Pressure	6 psi
Motor	5 hp
Speed Control	VFD
Grit Pump	
Quantity	1
Type	Submersible Centrifugal
Capacity	220 gpm @ 22 feet TDH
Motor	5 hp
Hydrocyclone	
Quantity	1
Capacity	220 gpm
Pressure	7 psi

Grit/Aeration Basin (Cont'd)	
Grit Classifier	
Quantity	1
Motor	1 hp
Selector Zones	
Quantity	3
Dimensions, each	Sx-1:11.25'Lx7'Wx10' SWD Sx-2:11.25Lx7'Wx10' SWD Sx-3:11.25'Lx14'Wx10' SWD
Volume, each	Sx-1:5,800 gal Sx-2:5,800 gal Sx-3:11,600 gal
F:M, each	Sx-1: 6 lb BOD5/lb MLSS/day Sx-2: 3 lb BOD5/lb MLSS/day Sx-3: 1.5 lb BOD5/lb MLSS/day
Type of Mixing	Coarse Bubble Diffused Air
Mixing Rate	20 scfm/ 1000 ft^3
Air Volume Required	60 scfm
Oxic Zones	
Quantity	1
Dimensions	48.75'Lx28'Wx10' SWD
Volume	102,000 gal
Design MLSS Concentration	2,300 mg/L
Design SRT	10 days
Design HRT @ MMF	7 hours
SOTR	2,460 lb O_2/day
Air Diffusers	Fine Bubble Membrane
Aeration Basin Blowers	
Quantity	2
Type	Positive Displacement
Capacity, each	700 scfm
Discharge Pressure	6 psi
Motor	30 hp
Speed Control	VFD
Oxidation Ditch	
Dimensions	24.5' Channel Width 127' Center Wall Length 5' Side Water Depth
Volume	277,000 gal
Hydraulic Detention Time @ MMF	18 hours
Hydraulic Detention Time @ PHF	6 hours
SOTR	1,500 lbs/day
Oxidation Ditch Rotors	
Quantity	2
Rotor Length	15 feet
Rotor Diameter	42 inches
Capacity, each	31 lbs O_2/hr
Motor	20 hp
Secondary Clarifiers	
Quantity	1 new, 1 existing
Dimension	30-foot diameter, 13 feet SWD
Surface Area	707 ft^2
Surface Loading Rate, @ 0.18 MGD, (50% of the MMF)	254 gpd/ft^2
Surface Loading Rate, @ 0.55 MGD, (50% of the PHF)	777 gpd/ft^2
Solids Loading Rate @ 0.364 MGD (50% MMF + RAS flow), MLSS 2,300 mg/L	10 lbs/day/ft^2
Solids Loading Rate @ 0.914 MGD (50% PHF + Max RAS flow), MLSS 2,300 mg/L	24 lbs/day/ft^2

RAS Pump Station	
RAS Pumps	
Quantity	3
Type	Dry Pit Non-Clog Centrifugal, Horizontal
Capacity	252 gpm @ 15.2 feet TDH
Motor	2 hp
Speed Control	VFD
RAS Flow Meter	
Quantity	3
Type	Magnetic
Size	4-inch
Range	0-1,920 gpm
WAS Flow Meter	
Quantity	1
Type	Magnetic
Size	4-inch
Range	0-1,920 gpm
Scum Pump Station	
Wet Well	
Dimensions	4-foot diameter, 15 feet deep
Working Volume	380 gal
Scum Pump	
Quantity	1
Type	Submersible Centrifugal
Capacity	100 gpm @ 21 feet TDH
Motor	3 hp
Level Control	2 float switches
Effluent Flow Meter	
Type	V-notch
Level Measurement	Ultrasonic
Capacity	0-1,118 gpm
Effluent Disinfection	
Type	Open Channel, Horizontal, Low Pressure UV Disinfection
Quantity of Banks	1
Quantity of Modules	8
Lamps per Module	4
Total Quantity of Lamps	32
Design UV Transmittance	65 percent
Design Peak Day Disinfection Flow	0.73 MGD
Design Max Total Suspended Solids	30 mg/L
Guaranteed Disinfection Limit	200/100 ml fecal coliform on a 30-day geometric mean
Sludge Holding Tank	
Sludge Tank (existing/modified)	
Dimensions	22-foot diameter, 13.5 SWD (3 feet new)
Volume	37,000 gal
Blower (new)	
Quantity	1
Type	Positive Displacement
Capacity, each	225 scfm
Discharge Pressure	6 psi
Motor	10 hp
Speed Control	VFD
Sludge Pump (new)	
Quantity	2
Type	Positive Displacement, Rotary Lobe
Capacity	27 gpm @ 14 feet TDH
Motor	3 hp
Speed Control	VFD

Sludge Dewatering System	
Flocculation Tank	
Volume	100 gal
Motor	1 hp
Screw Press	
Quantity	1
Inlet Capacity	133 lb/hr
Feed Concentration	2 percent
Discharge Concentration	15 percent
Motor	1.0 hp
Speed Control	VFD
Polymer System	
Type	Liquid
Feed Pump Type	Peristaltic
Feed Pump Capacity	.025-.50 gal/hr
Sludge Drying Beds	
Quantity	2
Area of Bed, each	22 feet wide, 45 feet long
Total Area	1,980 ft^2
Bed Construction	Concrete walls, asphalt floor, no drain
Non-Potable Water System	
Tank (existing)	
Dimensions	20'Lx8'Wx4' SWD
Volume	4,525 gal
Pumps	
Quantity	2
Type	Vertical Turbine
Capacity	150 gpm @ 184 feet TDH
Motor	15 hp
Speed Control	VFD
Generator	
Type	Diesel
Rating	150 kW
Chlorine Emergency Scrubber (new)	
Type	Vertical Flow
Dimensions	4-Foot
Media	Dry Scrubbing Media
Capacity	500 cfm
Blower Motor	5 hp
Chlorine Injector (existing, relocated)	
Type	Vacuum Operated
Feed Rate	50 ppd

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CONSULTING ENGINEERS
180 IRONHORSE COURT
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DATE:	OCT 2021
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APPROVED:	NJW

No.	REVISION	DATE	APPD

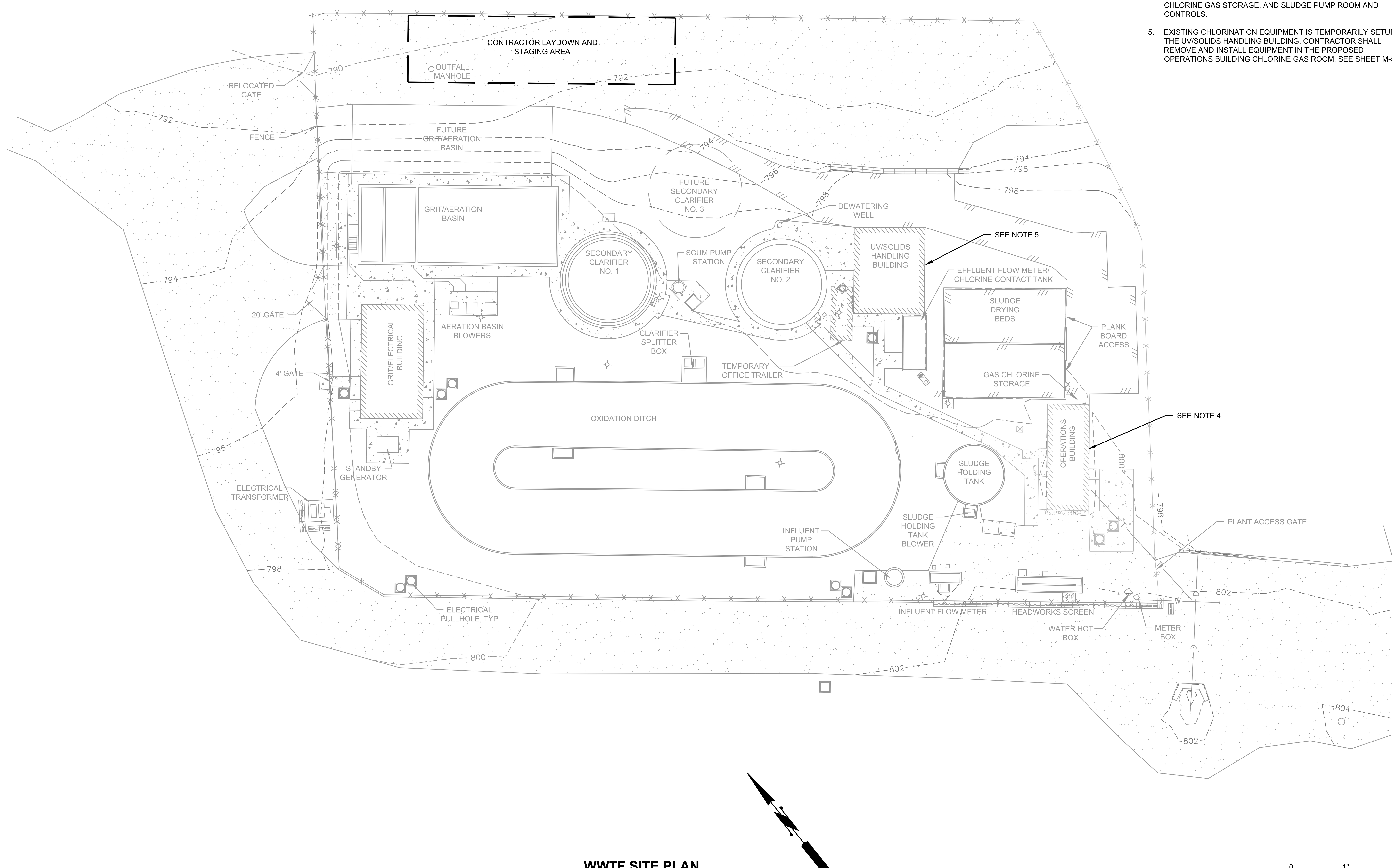
NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER
10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
WWTF DESIGN CRITERIA

SHEET: G-5
OF: 12

JOB NO.: 20859
DWG: G_DCR

I:\bridgeport\20859 - emergency fire response services\Planset\General\G_DCR.DWG, 10/8/2021 10:13 AM, BRANDON STEWART



WWTF SITE PLAN

SCALE: 1" = 20'

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

NOTES:

1. SEE SPECIFICATION 01110 OF THE CONTRACT SPECIFICATIONS FOR INFORMATION REGARDING THE ORDER OF WORK.
2. CONTRACTOR SHALL REPLACE OR REPAIR ASPHALT, GRAVEL, SIDEWALKS, LANDSCAPING, AND FENCING DAMAGED DURING CONSTRUCTION.
3. ELECTRICAL PULLHOLES, LUMINARIES, AND DUCTBANKS ARE SHOWN ON THIS PLAN FOR REFERENCE ONLY. REFER TO E SHEETS FOR EXACT LOCATIONS AND DETAILS ON THE ELECTRICAL SITE PLAN.
4. THE OPERATIONS BUILDING AND STORAGE BUILDING BURNED AS PART OF THE PEARL HILL FIRE IN SEPTEMBER 2020. THE FACILITIES BURNED INCLUDE THE WWTF LABORATORY, OFFICE, AND RESTROOM, OPERATIONS BUILDING CONTROL PANEL, HEADWORKS SCREEN PANEL, CHLORINE DOSING ROOM, CHLORINE GAS STORAGE, AND SLUDGE PUMP ROOM AND CONTROLS.
5. EXISTING CHLORINATION EQUIPMENT IS TEMPORARILY SETUP IN THE UV/SOLIDS HANDLING BUILDING. CONTRACTOR SHALL REMOVE AND INSTALL EQUIPMENT IN THE PROPOSED OPERATIONS BUILDING CHLORINE GAS ROOM, SEE SHEET M-5.

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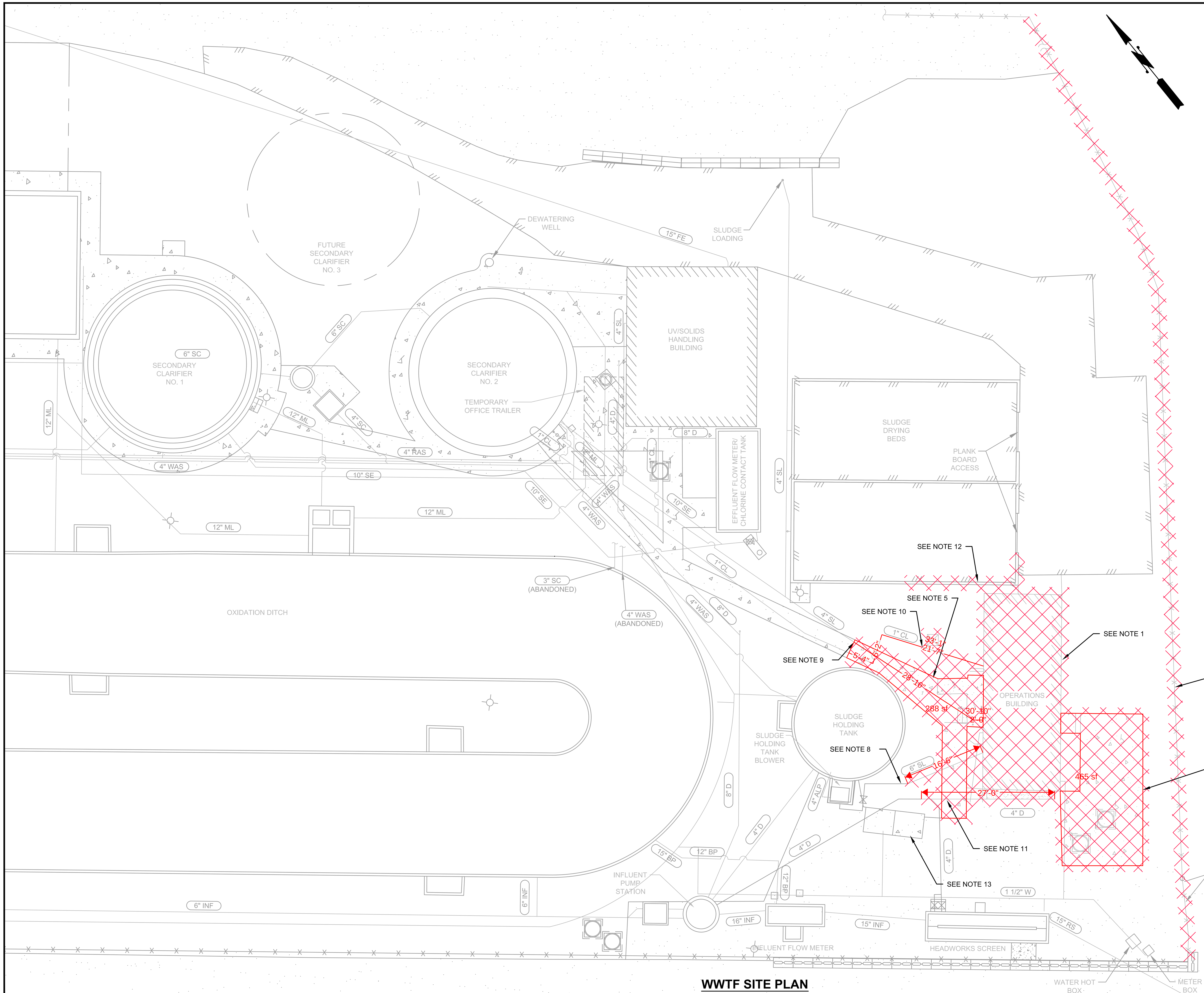
NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER
10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
EXISTING SITE CONDITIONS

SHEET: G-6
OF: 12

JOB NO.: 20859
DWG: G_SITE_EX_TESC



WWTF SITE PLAN

SCALE: 1" = 10'

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

NOTES:

1. THE CITY REMOVED ALL ABOVE GRADE WALLS OF THE EXISTING OPERATIONS BUILDING AND ONLY A PORTION OF THE CONCRETE BASEMENT WALLS FOUNDATION CURRENTLY REMAINS.
2. IN ADDITION TO THE ITEMS SHOWN TO BE DEMOLISHED, THE CONTRACTOR SHALL REMOVE & DISPOSE OF ALL ASPHALT, CONCRETE WALLS, CONCRETE SLABS, PIPING, ELECTRICAL CONDUIT, CONCRETE ENCASEMENTS, AND ANY OTHER ITEMS REQUIRED TO CONSTRUCT THE NEW OPERATIONS BUILDING, EXCEPT AS NOTED TO BE SALVAGED.
3. CONTOURS NOT SHOWN FOR CLARITY.
4. CONTRACTOR SHALL PROVIDE THE TREATMENT PLANT OPERATORS WITH ACCESS TO ALL EXISTING FACILITIES STILL IN SERVICE AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT AND LABOR NECESSARY TO AID THE OPERATORS IN ACCESSING THE FACILITIES.
5. CONTRACTOR SHALL DEMOLISH EXISTING SIDEWALKS.
6. CONTRACTOR SHALL DEMOLISH AND REPLACE FENCE.
7. CONTRACTOR SHALL DEMOLISH EXISTING CONCRETE PAD AND PULLHOLES AS NECESSARY TO CONSTRUCT NEW OPERATIONS BUILDING. SEE ELECTRICAL DRAWINGS.
8. CONTRACTOR SHALL DEMOLISH 6" SL TO THE POINT OF CONNECTION OF THE NEW 6" SL.
9. DEMOLISH 4" SL TO THE POINT OF CONNECTION TO NEW 4" SL.
10. DEMOLISH EXISTING 1" CL TO THE POINT OF CONNECTION TO NEW 1" CL.
11. DEMOLISH EXISTING 4" D TO THE POINT OF CONNECTION TO NEW 4" D.
12. DEMOLISH AND REPLACE PORTION OF SLUDGE DRYING BED AS REQUIRED NEAR EXCAVATION FOR OPERATIONS BUILDING.
13. CONTRACTOR SHALL PROTECT EXISTING ELECTRICAL EQUIPMENT.

LEGEND:

ITEMS TO BE DEMOLISHED BY CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

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180 IRONHORSE COURT
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No.	REVISION	DATE	APPD

NANCY J. WELCH — STATE OF WASHINGTON — 42805 — REGISTERED PROFESSIONAL ENGINEER

10/10/21

CITY OF BRIDGEPORT

DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

EXISTING PROCESS PIPING AND SITE DEMOLITION PLAN

SHEET: G-7
OF: 12

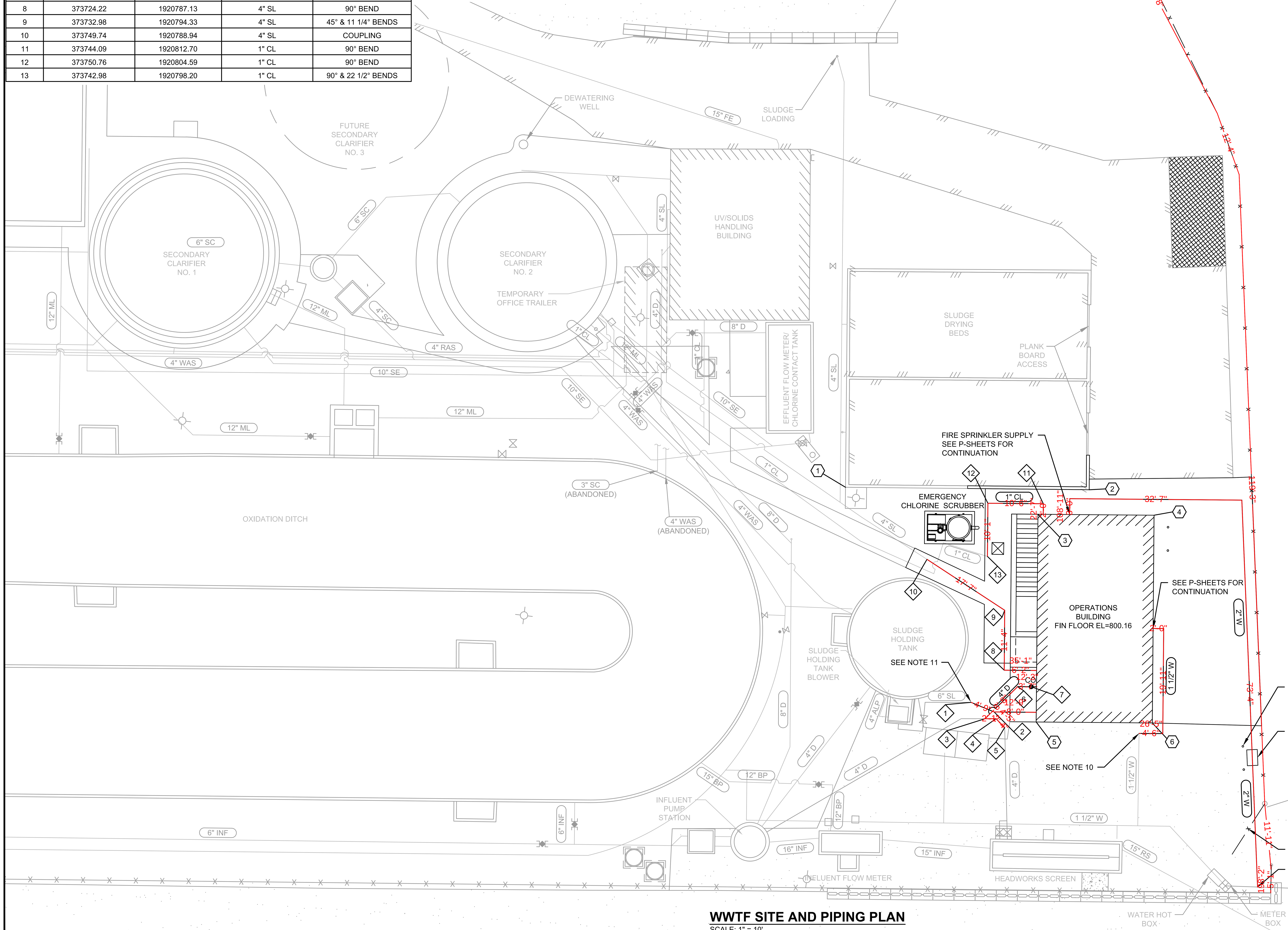
JOB NO.: 20859
DWG: G_SITE_EX_DEMO

YARD PIPING COORDINATES

⟨X⟩	NORTHING	EASTING	SIZE-PROCESS	COMMENT
1	373723.43	1920778.43	6" SL	22 1/2° BEND
2	373719.27	1920780.69	6" SL	22 1/2° BEND
3	373719.17	1920778.96	4" D	WYE
4	373718.05	1920780.15	4" D	45° BEND
5	373715.72	1920780.40	4" D	45° BEND
6	373720.20	1920787.16	4" D	45° BEND
7	373718.57	1920789.14	4" D	CLEAN OUT
8	373724.22	1920787.13	4" SL	90° BEND
9	373732.98	1920794.33	4" SL	45° & 11 1/4° BENDS
10	373749.74	1920788.94	4" SL	COUPLING
11	373744.09	1920812.70	1" CL	90° BEND
12	373750.76	1920804.59	1" CL	90° BEND
13	373742.98	1920798.20	1" CL	90° & 22 1/2° BENDS

STRUCTURE COORDINATES

(X)	NORTHING	EASTING	IDENTIFICATION FEATURE	COMMENT
1	373770.05	1920785.50	SLUDGE DRYING BED	SW CORNER
2	373740.69	1920821.12	SLUDGE DRYING BED	SE CORNER
3	373743.18	1920810.66	OPERATIONS BUILDING	NW CORNER
4	373729.21	1920827.66	OPERATIONS BUILDING	NE CORNER
5	373712.79	1920785.69	OPERATIONS BUILDING	SW CORNER
6	373698.82	1920802.68	OPERATIONS BUILDING	SE CORNER



WWTF SITE AND PIPING PLAN

SCALE: 1" = 10'

NOTES:

1. SEE SECTION 01100 FOR INFORMATION REGARDING ORDER OF WORK.
2. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK.
3. PIPING BETWEEN POINT OF INDICATED ELEVATIONS TO BE SET AT A SINGLE UNIFORM GRADE UNLESS OTHERWISE SHOWN ON PLANS. CONTRACTOR TO FIELD VERIFY ELEVATION OF EXISTING PIPES.
4. ALL PIPING SHALL HAVE RESTRAINED JOINTS.
5. WHERE PIPES CROSS WITH LESS THAN ONE FOOT OF CLEARANCE CRUSHED SURFACING TOP COURSE SHALL BE USED BETWEEN THE PIPES. THE CRUSHED ROCK SHALL BE HAND TAMPED AND COMPACTED BETWEEN PIPES.
6. FOR PIPE TRENCH DETAILS SEE DETAIL 1/G-10.
7. FOR INVERT ELEVATIONS AND FITTINGS AT OR NEAR STRUCTURES SEE SHEET M-4.
8. FOR VALVE BOX DETAIL SEE DETAIL 2/G-10.
9. FOR PIPE CLEAN OUTS (CO), SEE DETAIL 7/G-10
10. WHEN CONNECTING NEW PIPING TO EXISTING PIPING CONTRACTOR SHALL PROVIDE ALL COUPLINGS AND FITTINGS NECESSARY TO PROVIDE A CONNECTION THAT MEETS OR EXCEEDS THE PRESSURE RATING OF THE NEW PIPE.
11. CONTRACTOR TO POTHOLE (6" SL) AT POINT OF CONNECTION AND PROVIDE INVERT ELEVATION INFORMATION TO ENGINEER.
12. REFER TO E-SHEETS FOR LOCATIONS AND DETAILS OF THE ELECTRICAL SITE PLAN.
13. ⟨X⟩ INDICATES PIPE COORDINATE LOCATION AND IDENTIFICATION. COORDINATES SHOWN LOCATE CENTERS OF FITTINGS OR CHANGES IN GRADE.
14. (X) INDICATES BUILDING AND SURFACE FEATURE COORDINATE LOCATION AND IDENTIFICATION.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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180 IRONHORSE COURT
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No.	REVISION	DATE	APPD

NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER
10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
SITE AND PROCESS PIPING PLAN

SHEET: G-8
OF: 12

JOB NO.: 20859
DWG: G_SITE_PROC

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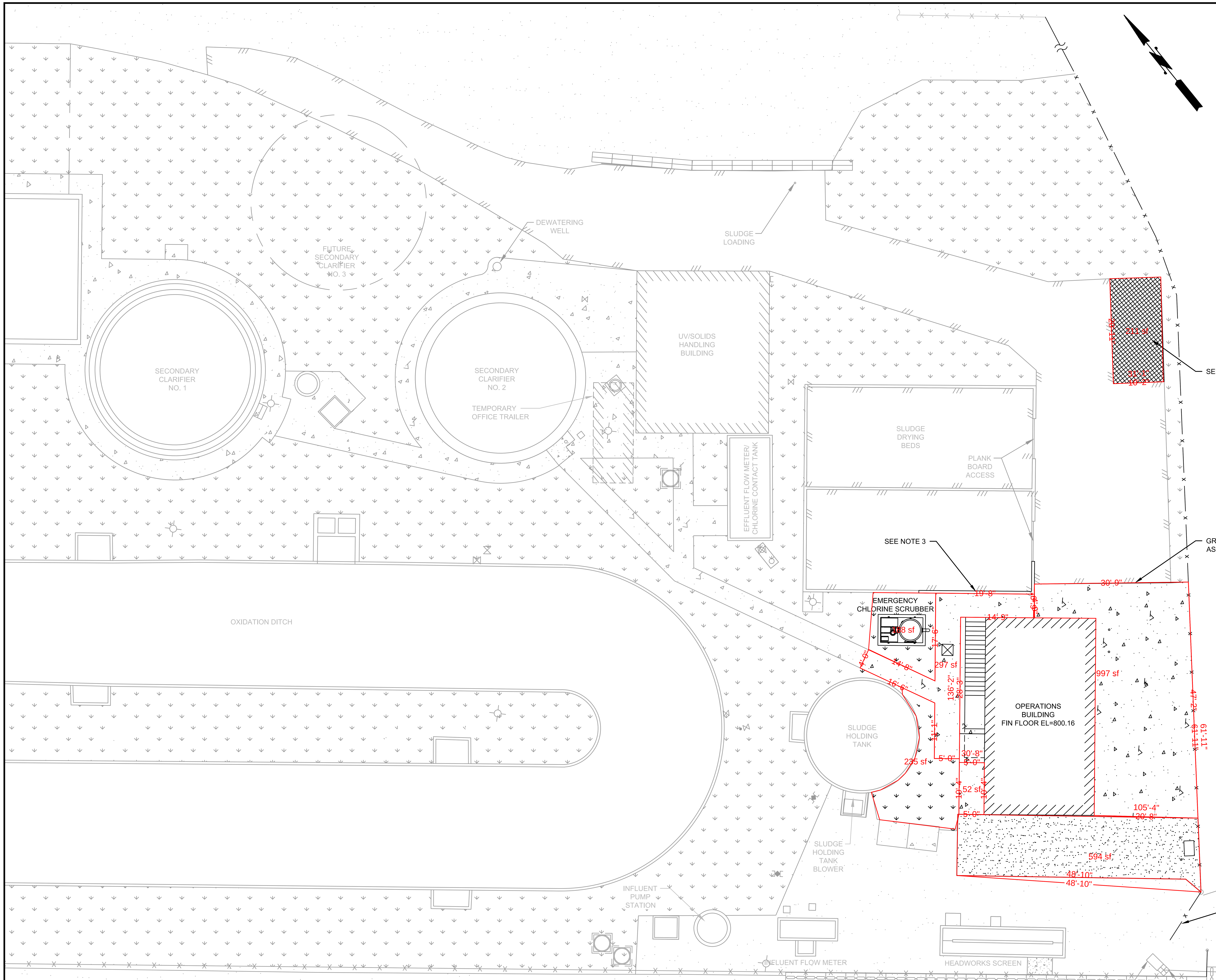

DRAINAGE, PAVING AND GRADING PLAN

SCALE: 1" = 10'

GENERAL NOTES:

1. CONTRACTOR TO RESTORE COVER TO ALL DISTURBED AREAS.
2. GRADE/ASPHALT REPAIR TO MATCH EXISTING, NEW PAVEMENT DETAIL 5/G-10.
3. DEMOLISH AND REPLACE PORTION OF SLUDGE DRYING BED AS REQUIRED NEAR EXCAVATION FOR OPERATIONS BUILDING.

LEGEND:

- ASPHALT REPAIR
- CONCRETE SURFACING
- GRASS
- EXISTING GRASS
- 5/8 TOP COURSE, 2" THICK

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER

10/10/21

CITY OF BRIDGEPORT

DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

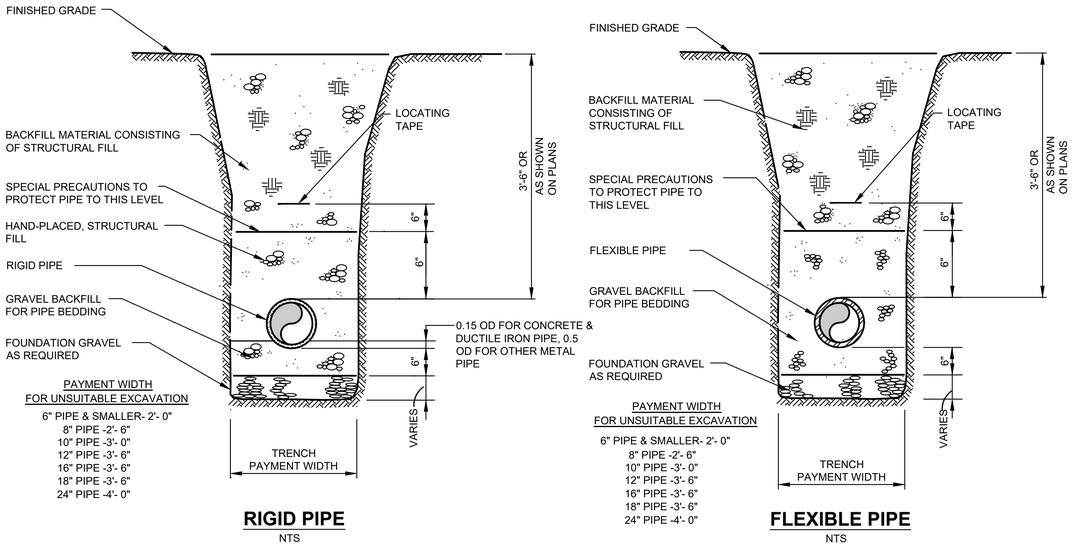
DRAINAGE, PAVING AND GRADING PLAN

SHEET: G-9

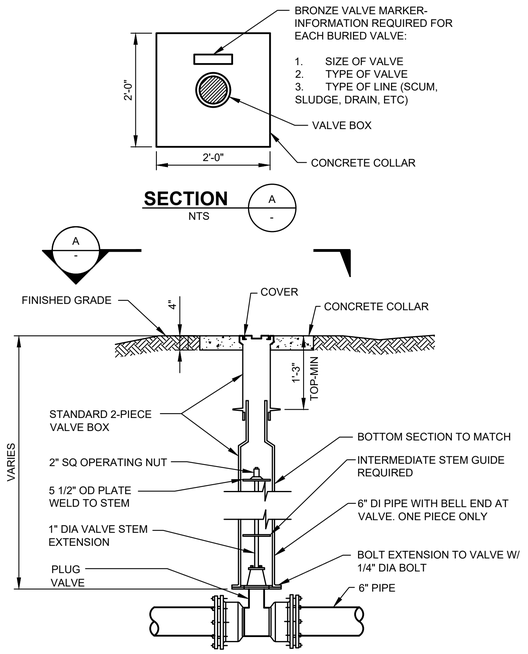
OF: 12

JOB NO.: 20859

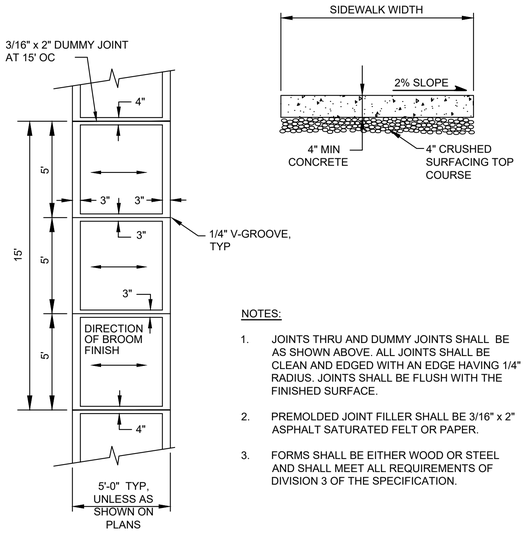
DWG: G_SITE_PROC



1 - TYPICAL TRENCH SECTIONS
NOT TO SCALE



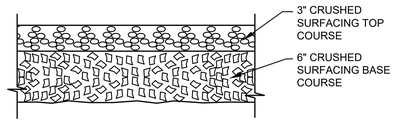
2 - TYPICAL VALVE BOX DETAIL
NOT TO SCALE



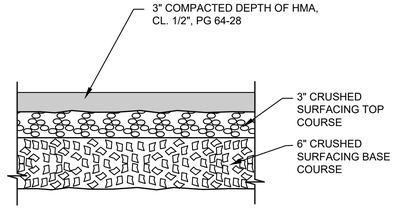
NOTES:

1. JOINTS THRU AND DUMMY JOINTS SHALL BE AS SHOWN ABOVE. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
2. PREMOLDED JOINT FILLER SHALL BE 3/16" x 2" ASPHALT SATURATED FELT OR PAPER.
3. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF DIVISION 3 OF THE SPECIFICATION.

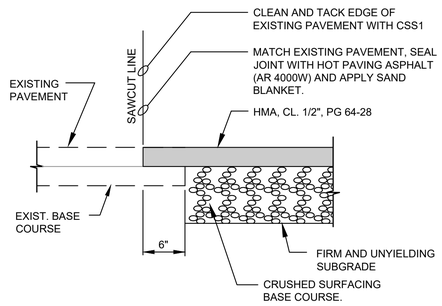
3 - SIDEWALK DETAIL
NOT TO SCALE



4 - GRAVEL DRIVEWAY DETAIL
NOT TO SCALE



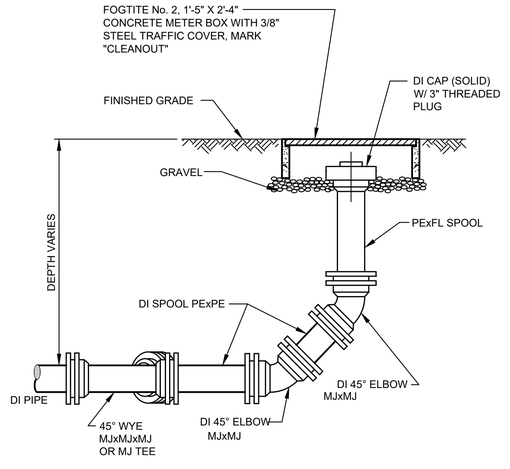
5 - NEW ASPHALT PAVEMENT DETAIL
NOT TO SCALE



NOTES:

1. ALL JOINTS SHALL BE FULL DEPTH SAW CUT.
2. ALL CATCH BASINS, VALVES AND OTHER APPURTENANCES SHALL BE TACK COATED WITH AN ASPHALT EMULSION PRIOR TO THE APPLICATION OF HMA.
3. COMPACTED HMA SHALL NOT EXTEND MORE THAN 1/4" ABOVE THE EXISTING SURFACE.

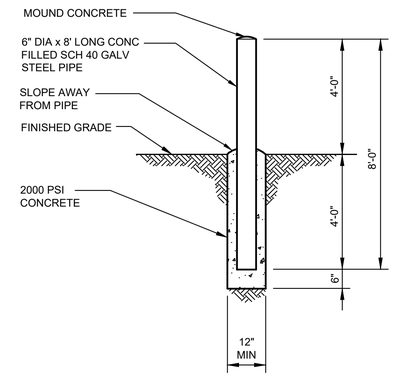
6 - ASPHALT BUTT JOINT DETAIL
NOT TO SCALE



NOTES:

1. INSTALLATION PER TRENCH DETAILS.
2. 6" AND SMALLER PIPELINE, CLEANOUT TO MATCH PIPE SIZE.
3. 8" AND LARGER PIPELINES TO HAVE 8" CLEANOUT.
4. ALL MJ TO BE RESTRAINED WITH RETAINER GLAND.

7 - TYPICAL CLEANOUT DETAIL
NOT TO SCALE



NOTES:

1. THE EXACT LOCATION OF THE BOLLARDS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. BOLLARDS SHALL BE PAINTED SAFETY YELLOW.

8 - BOLLARD DETAIL
NOT TO SCALE

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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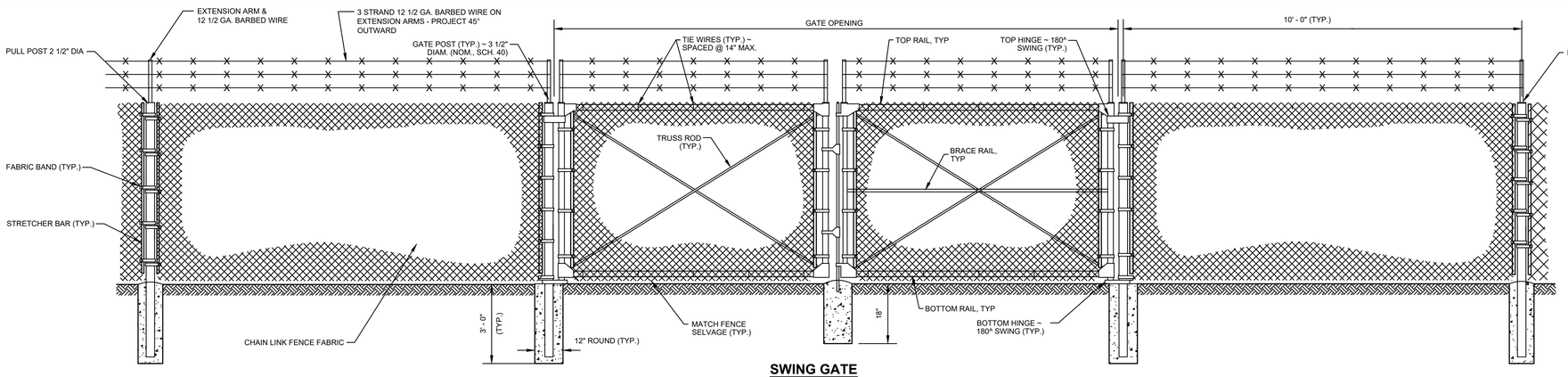
NANCY J. WETCH — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 10/10/21

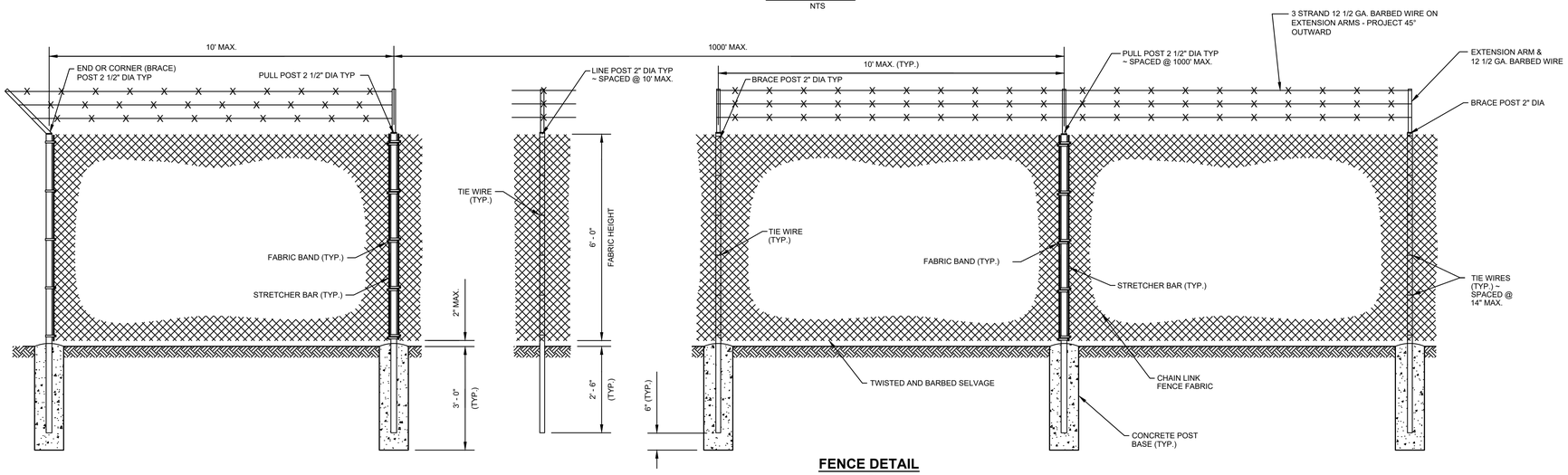
CITY OF BRIDGEPORT
WASHINGTON
DOUGLAS COUNTY
EMERGENCY FIRE RESPONSE SERVICES
GENERAL DETAILS

SHEET: G-10
OF: 12
JOB NO.: 20859
DWG: G-DET



SWING GATE

NTS



FENCE DETAIL

NTS

NOTES:

1. CHAIN LINK FENCE AND GATE SHALL BE FURNISHED AND INSTALLED ACCORDING TO SPECIFICATIONS AND SHALL HAVE 3 STRANDS OF BARBED WIRE ON TOP PROJECTING OUT ON EXTENSION ARMS AT APPROXIMATELY 45°.
2. CORNER POSTS SHALL BE INSTALLED AT ALL POINTS WHERE THE ALIGNMENT CHANGES 30° OR MORE AND AT ALL OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ALL POSTS SHALL BE SPACED AT 10' MINIMUM INTERVALS UNLESS OTHERWISE DIRECTED BY ENGINEER.
4. THE EXACT ALIGNMENT OF THE FENCE AND THE LOCATION OF THE GATES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
5. SINGLE MAN GATES SIMILAR TO GATE SHOWN.
6. ALL CONCRETE POST BASES SHALL BE 10" MIN DIAMETER.
7. DETAILS ARE ILLUSTRATIVE AND SHALL NOT LIMIT HARDWARE DESIGN OR POST SELECTION OF ANY PARTICULAR FENCE TYPE.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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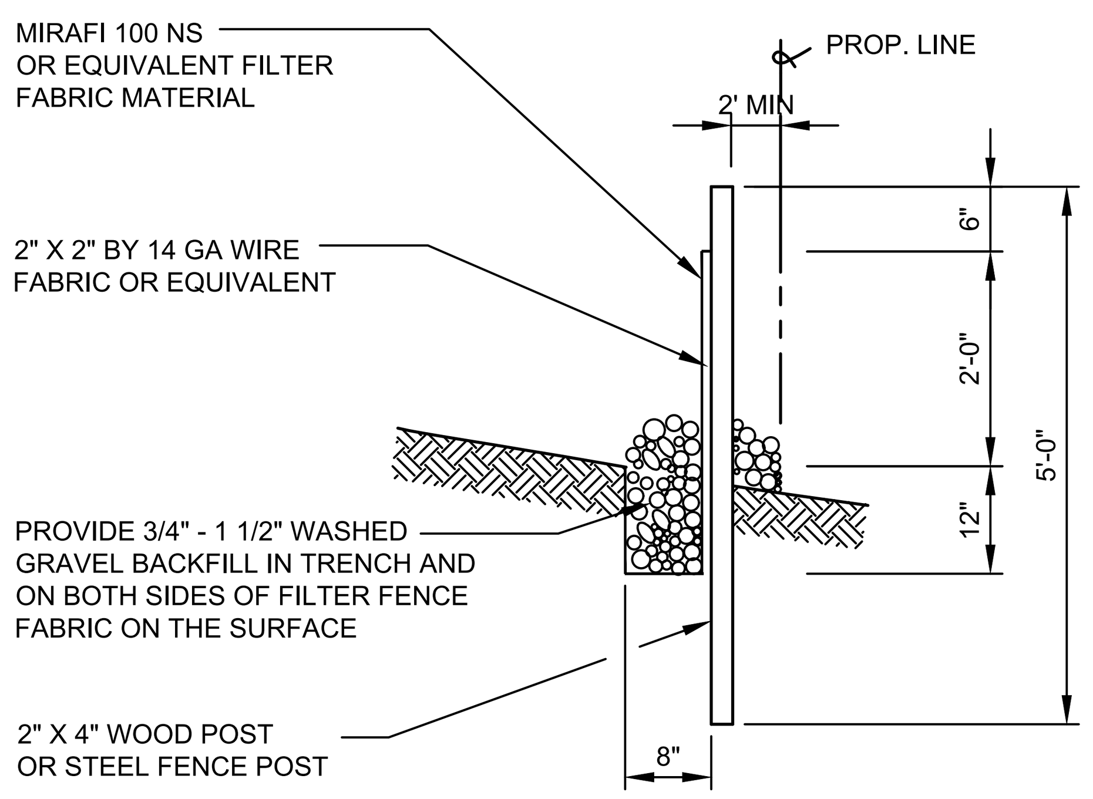
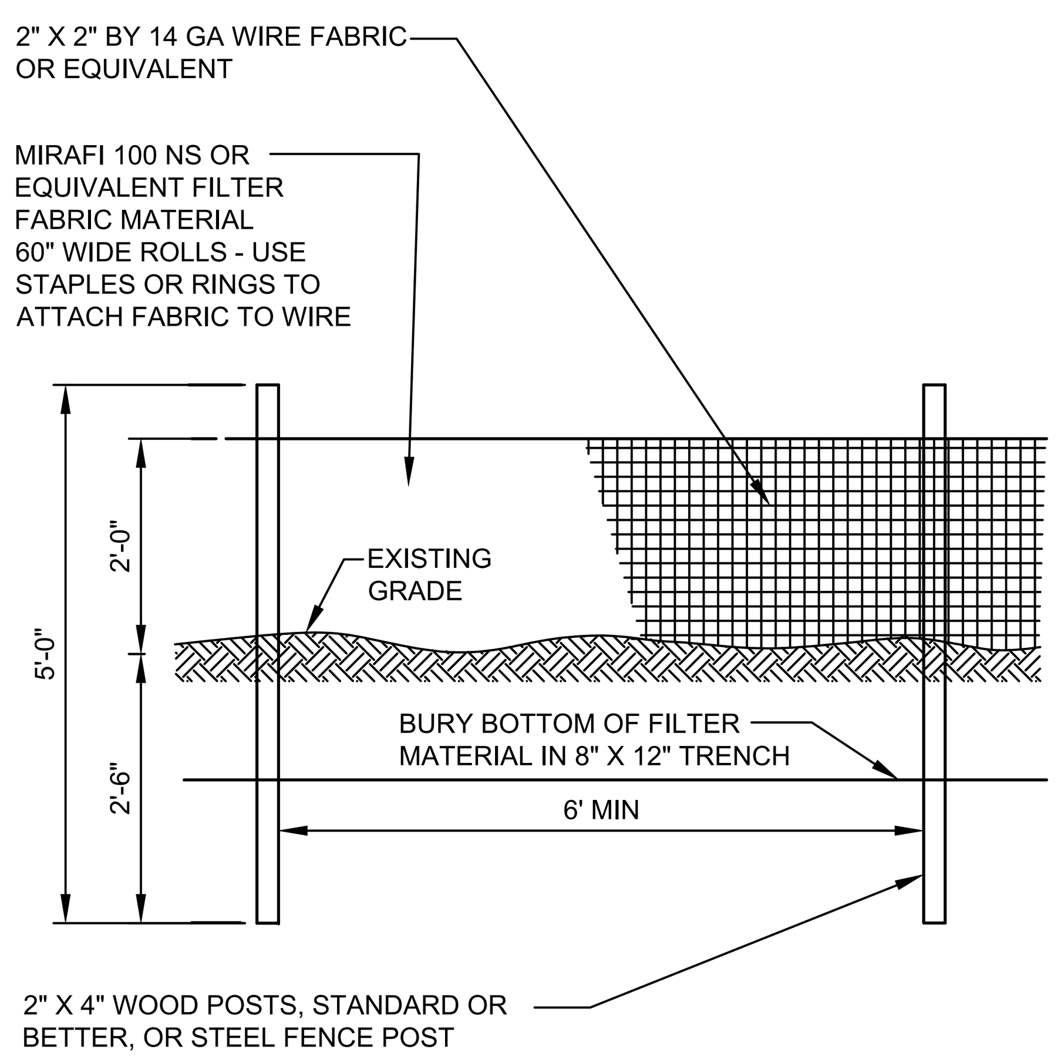
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
CHAIN LINK FENCE DETAILS

SHEET: G-11
OF: 12

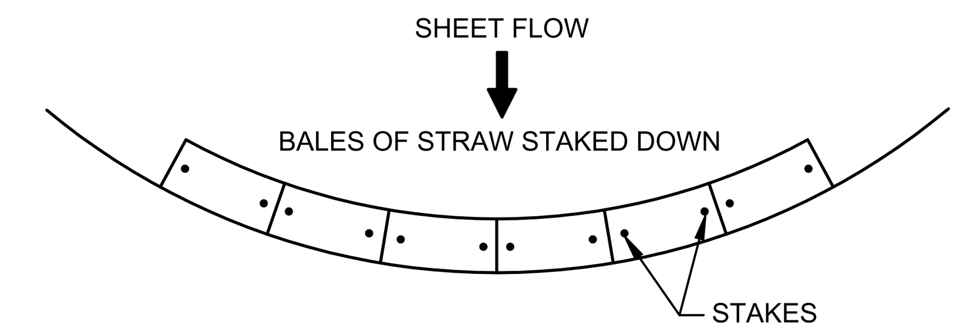
JOB NO.: 20859
DWG: G-DET



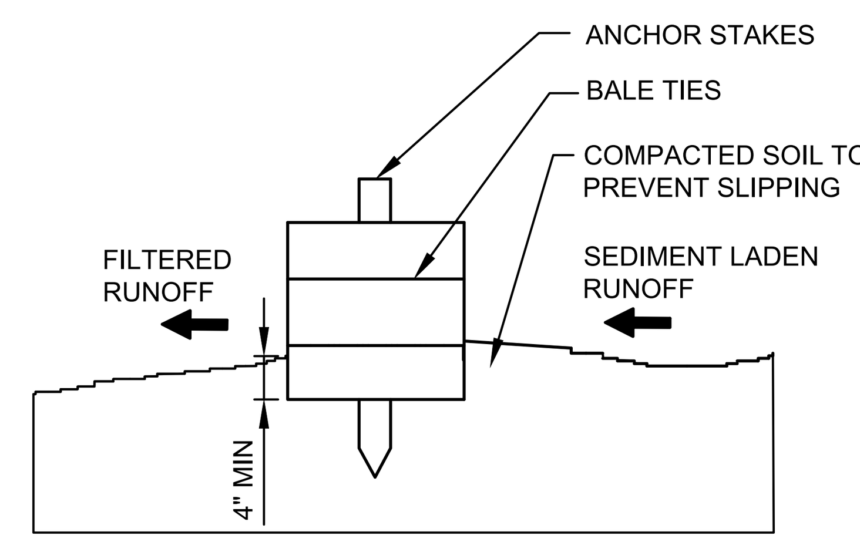
FILTER FABRIC FENCE SECTION
NTS



FILTER FABRIC FENCE ELEVATION
NTS

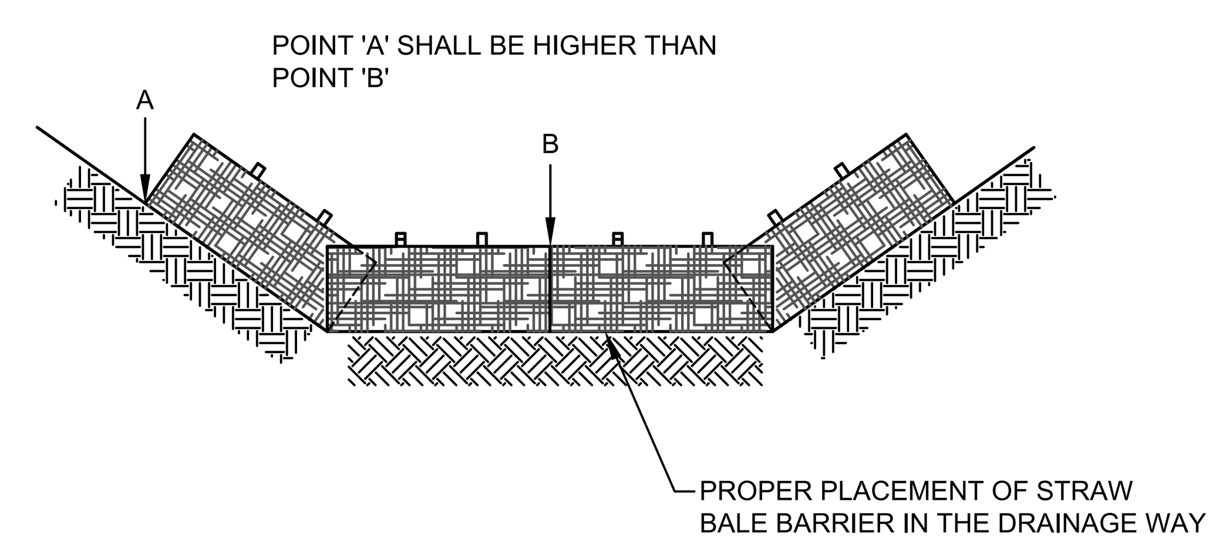


PLAN

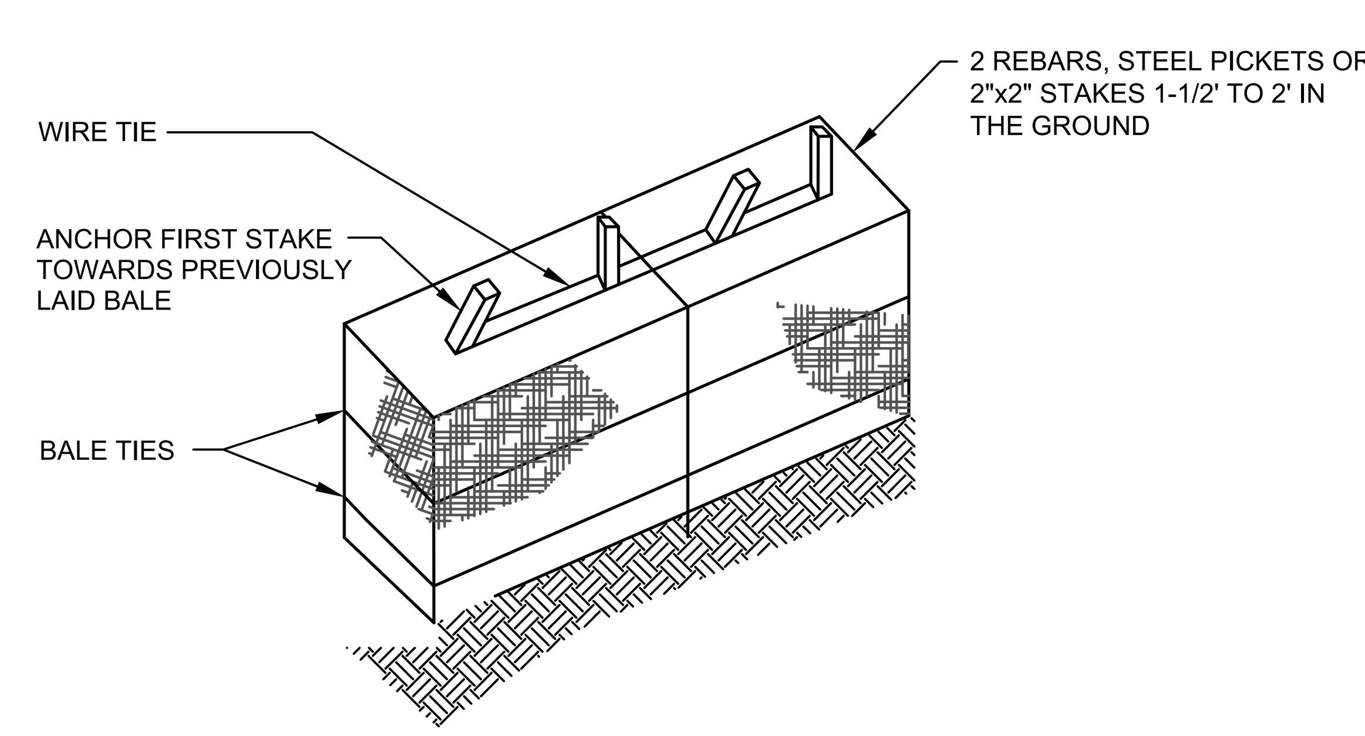


CROSS-SECTION

STRAW AND HAY BALE BARRIERS
NTS



SECTION



STRAW AND HAY BALE BARRIER ANCHOR DETAIL
NTS

EROSION/SEDIMENTATION CONTROL NOTES

1. CONTRACTOR SHALL SUBMIT TEMPORARY WATER POLLUTION/EROSION CONTROL PLAN PER THE CONTRACT SPECIFICATIONS.
2. ALL LIMITS OF CLEARING AND AREAS OF VEGETATION PRESERVATION SHALL BE OBSERVED DURING CONSTRUCTION.
3. ALL REQUIRED SEDIMENTATION/EROSION CONTROL FACILITIES MUST BE IN OPERATION PRIOR TO LAND CLEARING AND/OR OTHER CONSTRUCTION TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE NATURAL DRAINAGE SYSTEM. ALL EROSION AND SEDIMENT FACILITIES SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND /OR CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED. THE IMPLEMENTATION, MAINTENANCE, REPLACEMENT, AND ADDITIONS TO EROSION/SEDIMENTATION CONTROL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE EROSION AND SEDIMENTATION CONTROL SYSTEMS DEPICTED ON THIS DRAWING ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND AS UNEXPECTED OR SEASONAL CONDITIONS DICTATE, THE CONTRACTOR SHOULD ANTICIPATE THAT MORE EROSION AND SEDIMENTATION CONTROL FACILITIES WILL BE NECESSARY TO ENSURE COMPLETE SILTATION CONTROL ON THE PROPOSED SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE THE MINIMUM REQUIREMENTS, AS MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES AND THE WATER QUALITY OF THE RECEIVING DRAINAGE SYSTEM.
5. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF THE SEDIMENT. ALL CATCH BASINS, CONVEYANCE LINES AND DITCHES SHALL BE CLEANED PRIOR TO PAVING.
6. THE CONTRACTOR SHALL REMOVE MATERIAL DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE CITY RIGHT-OF-WAY OR INTO THE EXISTING STORM DRAINAGE SYSTEM. DEBRIS SHALL NOT BE WASHED INTO THE STORM DRAINAGE SYSTEM.
7. TEMPORARY EROSION CONTROL FACILITIES SHALL BE INSPECTED WEEKLY AND MAINTAINED WITHIN 24 HOURS FOLLOWING A STORM EVENT. SEDIMENT SHALL BE REMOVED TO INSURE THE FACILITIES WILL FUNCTION PROPERLY. THE FACILITIES SHALL BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED.
8. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
9. NO DISTURBED SOIL SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

DATE: OCT 2021
DRAWN: BJS
CHECKED: ZG
APPROVED: NJW

No.	REVISION	DATE	APPD

NANCY J. WELCH
STATE OF WASHINGTON
42805
REGISTERED PROFESSIONAL ENGINEER
10/10/21

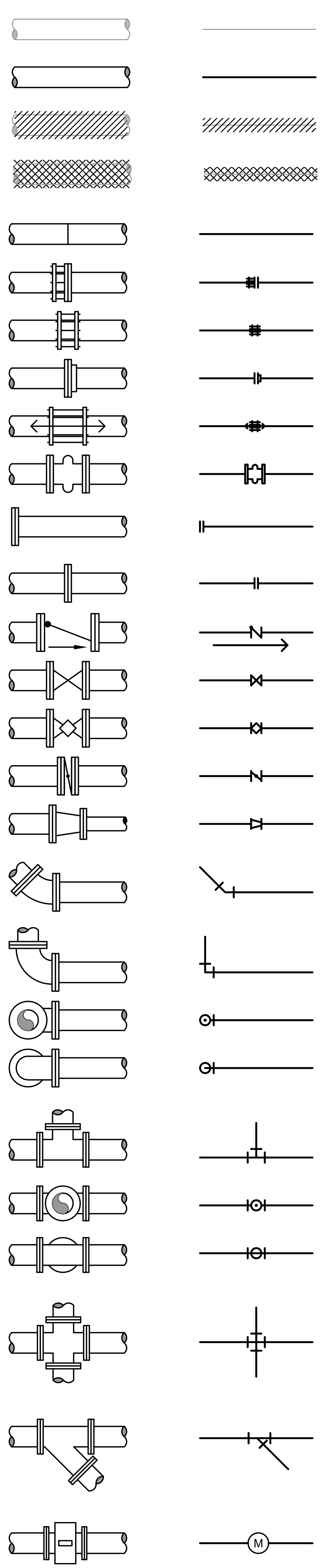
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
EROSION CONTROL DETAILS

SHEET: G-12
OF: 12
JOB NO.: 20859
DWG: G-DET

I:\bridgeport\20859 - emergency fire response services\Planset\General\G-DET.dwg, 10/8/2021 10:14 AM, BRANDON STEWART

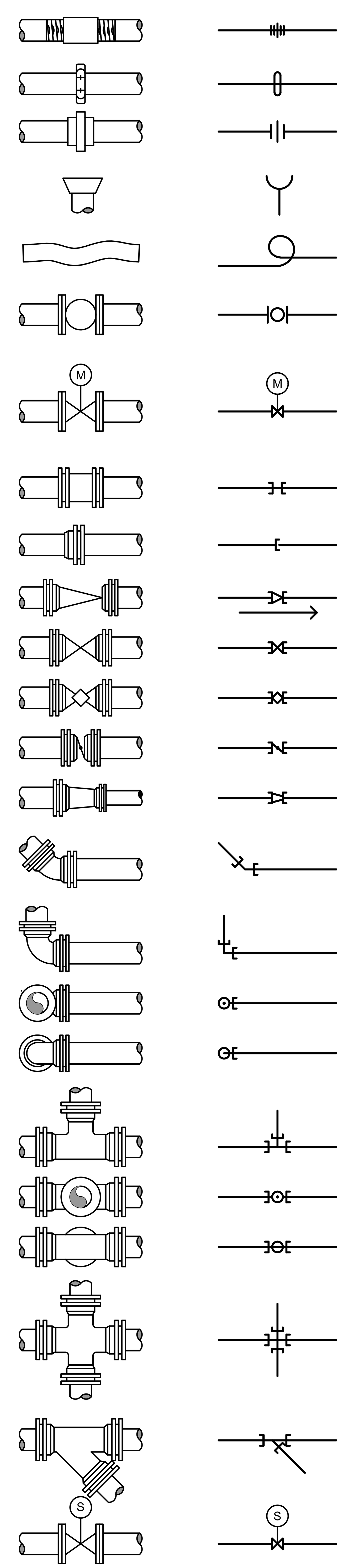
PIPING SYMBOLS

DOUBLE LINE | SINGLE LINE



- EXISTING PIPE
- NEW PIPE
- EXISTING PIPE OR EQUIPMENT TO BE ABANDONED IN PLACE
- EXISTING PIPE OR EQUIPMENT TO BE DEMOLISHED OR REMOVED
- WELDED
- FLANGED COUPLING ADAPTER
- FLEXIBLE COUPLING
- ADAPTER FLANGE
- RESTRAINED FLEXIBLE COUPLING
- RUBBER EXPANSION JOINT
- BLIND FLANGE
- FLANGED
- FLANGED CHECK VALVE
- FLANGED GATE VALVE
- FLANGED PLUG VALVE
- FLANGED BUTTERFLY VALVE
- FLANGED CONCENTRIC REDUCER
- FLANGED ELBOW, 45°
- FLANGED ELBOW, 90°
- FLANGED ELBOW UP
- FLANGED ELBOW DOWN
- FLANGED TEE
- FLANGED TEE UP
- FLANGED TEE DOWN
- FLANGED CROSS
- FLANGED WYE
- MAGNETIC FLOWMETER

DOUBLE LINE | SINGLE LINE



- SCREWED JOINT
- GROOVED COUPLING
- UNION
- BELL UP
- FLEXIBLE HOSE OR TUBING
- BALL VALVE
- VALVE WITH MOTOR ACTUATOR
- SOLID SLEEVE
- MECHANICAL JOINT
- MECHANICAL JOINT CHECK VALVE
- MECHANICAL JOINT GATE VALVE
- MECHANICAL JOINT PLUG VALVE
- MECHANICAL JOINT BUTTERFLY VALVE
- MECHANICAL JOINT CONCENTRIC REDUCER
- MECHANICAL JOINT ELBOW, 45°
- MECHANICAL JOINT ELBOW, 90°
- MECHANICAL JOINT ELBOW UP
- MECHANICAL JOINT ELBOW DOWN
- MECHANICAL JOINT TEE
- MECHANICAL JOINT TEE UP
- MECHANICAL JOINT TEE DOWN
- MECHANICAL JOINT CROSS
- MECHANICAL JOINT WYE
- VALVE WITH SOLENOID

NOTE:

FOR ADDITIONAL ABBREVIATIONS, SYMBOLS AND NOTES, SEE SHEET G-3, S-2 AND E-2.

PROCESS PIPING, VALVE, GATE AND EQUIPMENT IDENTIFICATIONS

PROCESS PIPING

24" SC
- PROCESS TYPE (SEE LIST BELOW)
- PIPE SIZE

ABBREVIATION	PROCESS TYPE
ALP	AIR LOW PRESSURE
BY	BYPASS
D	DRAIN
DS	DIGESTED SLUDGE
FE	FINAL EFFLUENT
ML	MIXED LIQUOR
NPW	NON-POT WATER
PDD	PLANT DRAIN DISCHARGE
RAS	RETURN ACTIVATED SLUDGE
RS	RAW WASTEWATER
SAM	SAMPLE
SC	SCUM
SE	SECONDARY EFFLUENT
SHC	SODIUM HYPOCHLORITE
SD	STORM DRAIN
SPD	SUMP PUMP DISCHARGE
SWD	STORMWATER DISCHARGE
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE

EQUIPMENT

POL 99
- EQUIPMENT NUMBER (SEQUENTIAL LISTING)
- EQUIPMENT TYPE (SEE LIST BELOW)

ABBREVIATION	EQUIPMENT TYPE
AB	AERATION BLOWER
B	AEROBIC DIGESTER BLOWER
BC	BIOSOLIDS CONVEYOR
DOM	DISSOLVED OXYGEN METER
DOT	PROBE TRANSMITTER
EFP	EFFLUENT PUMP
FLS	FLOAT SWITCH
FS	FINE SCREEN
FTM	FLOCCULATION TANK MIXER
LE	LEVEL ELEMENT
LS	LEVEL SENSOR
MFM	MAGNETIC FLOW METER
MS	MOTION SENSOR
MXR	SUBMERSIBLE MIXER/VERTICAL MIXER
NPW	NON-POTABLE WATER PUMP
ORP	OXIDATION REDUCTION POTENTIAL PROBE
PDP	PLANT DRAIN PUMP
PF	PARSHALL FLUME
POL	POLYMER SYSTEM
PS	PRESSURE SENSOR
RP	RAS PUMP
SA	INFLUENT SAMPLER
SCM	SECONDARY CLARIFIER MECHANISM
SCP	SCUM PUMP
SCR	SCREW PRESS
SHP	SODIUM HYPOCLORITE FEED PUMP
SP	SUMP PUMP
STP	DIGESTED SLUDGE TRANSFER PUMP
SWP	STORMWATER PUMP
UV	UV BANK

VALVES AND GATES

BV 99
- VALVE/GATE NUMBER (SEQUENTIAL LISTING)
- VALVE/GATE TYPE (SEE LIST BELOW)

ABBREVIATION	VALVE TYPE
BLV	BALL VALVE
CV	CHECK VALVE
GV	GATE VALVE
PV	PLUG VALVE

NOTE:

FOR HVAC EQUIPMENT IDENTIFICATION SEE SHEET H-1.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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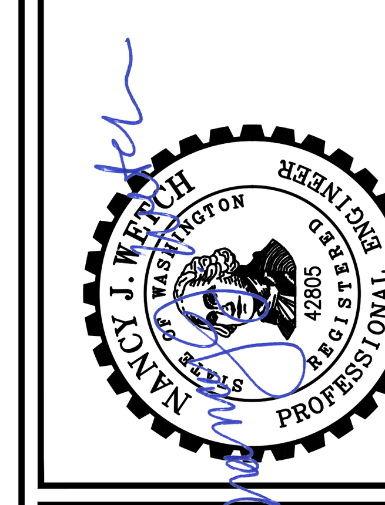
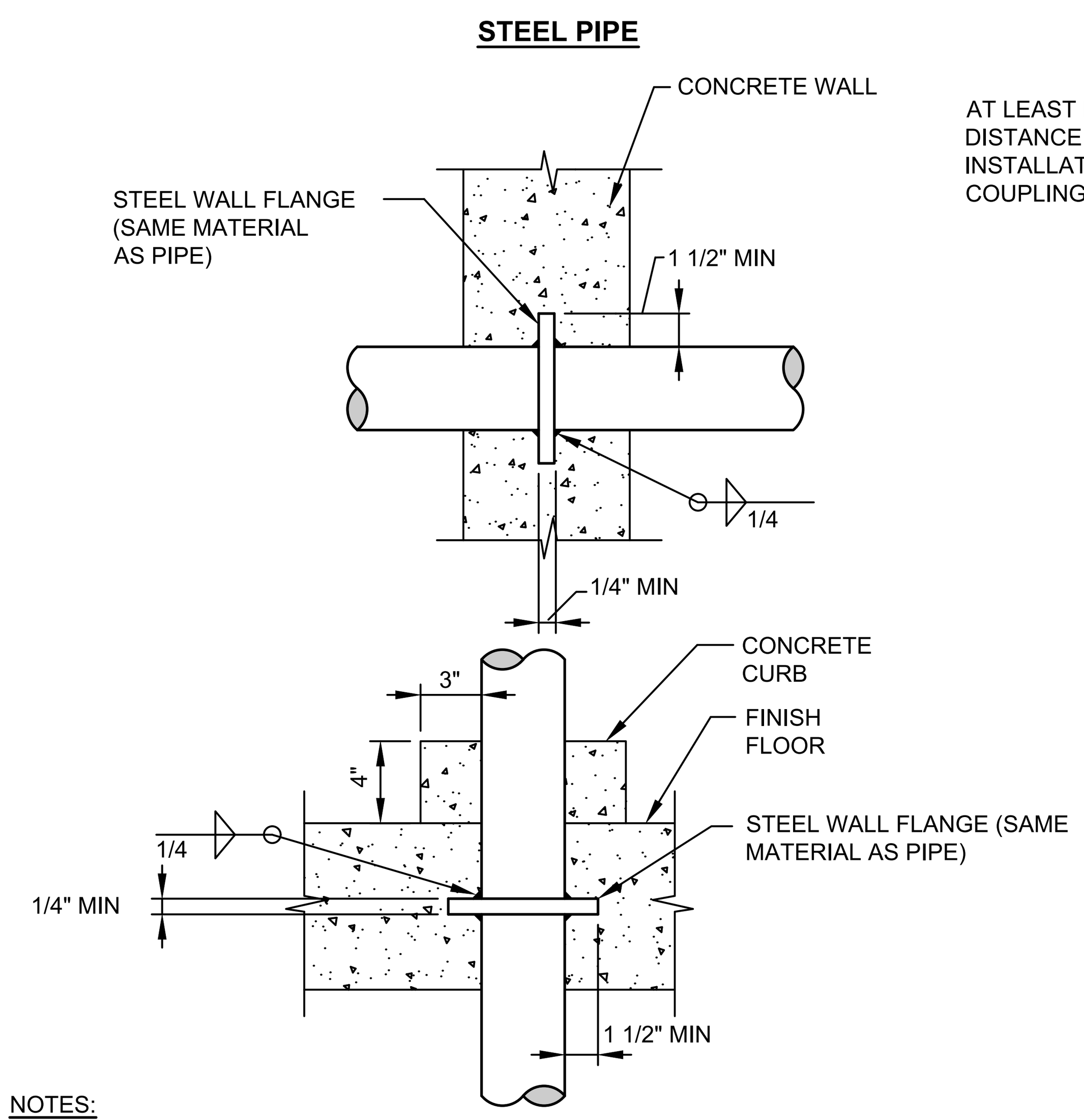
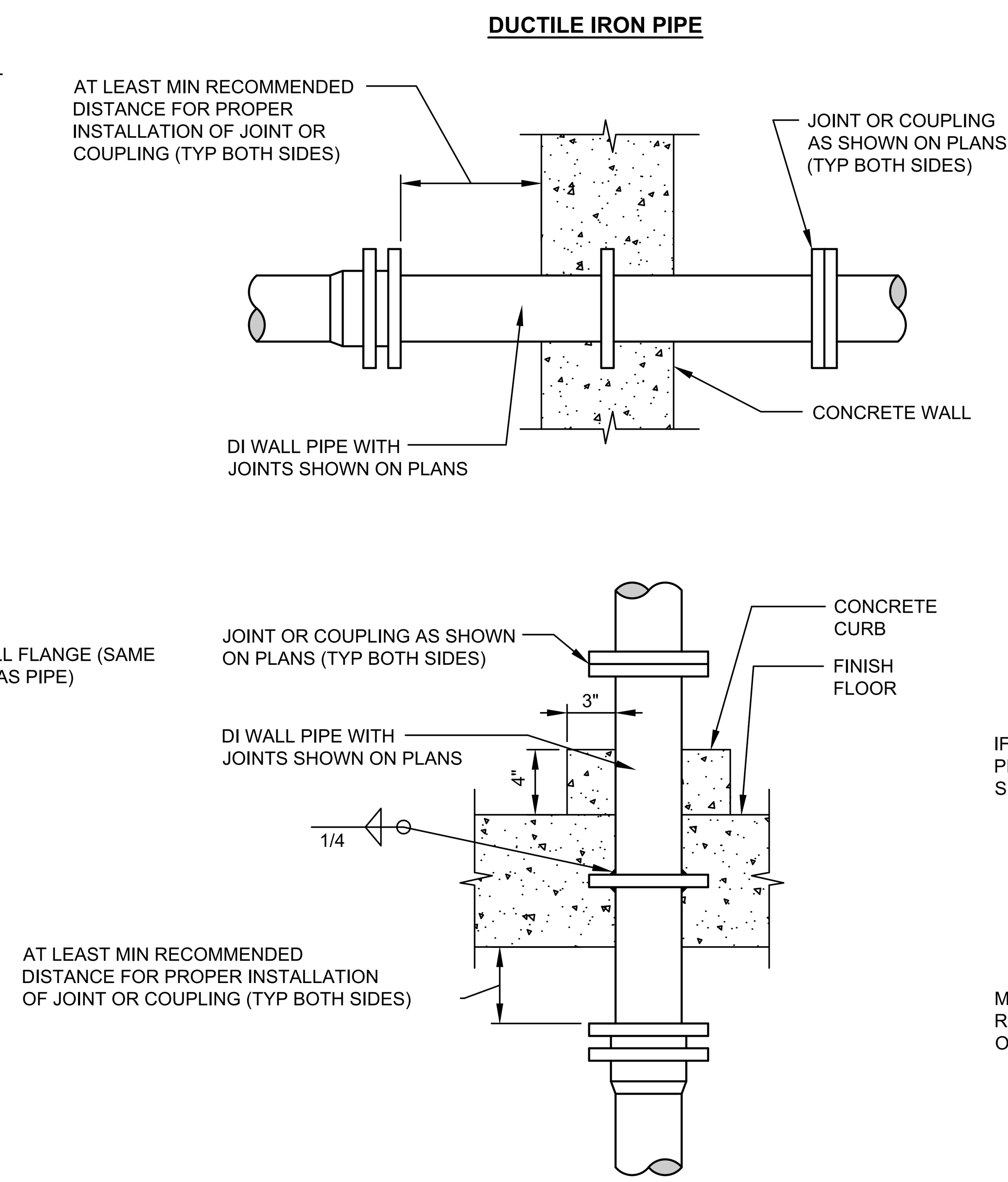
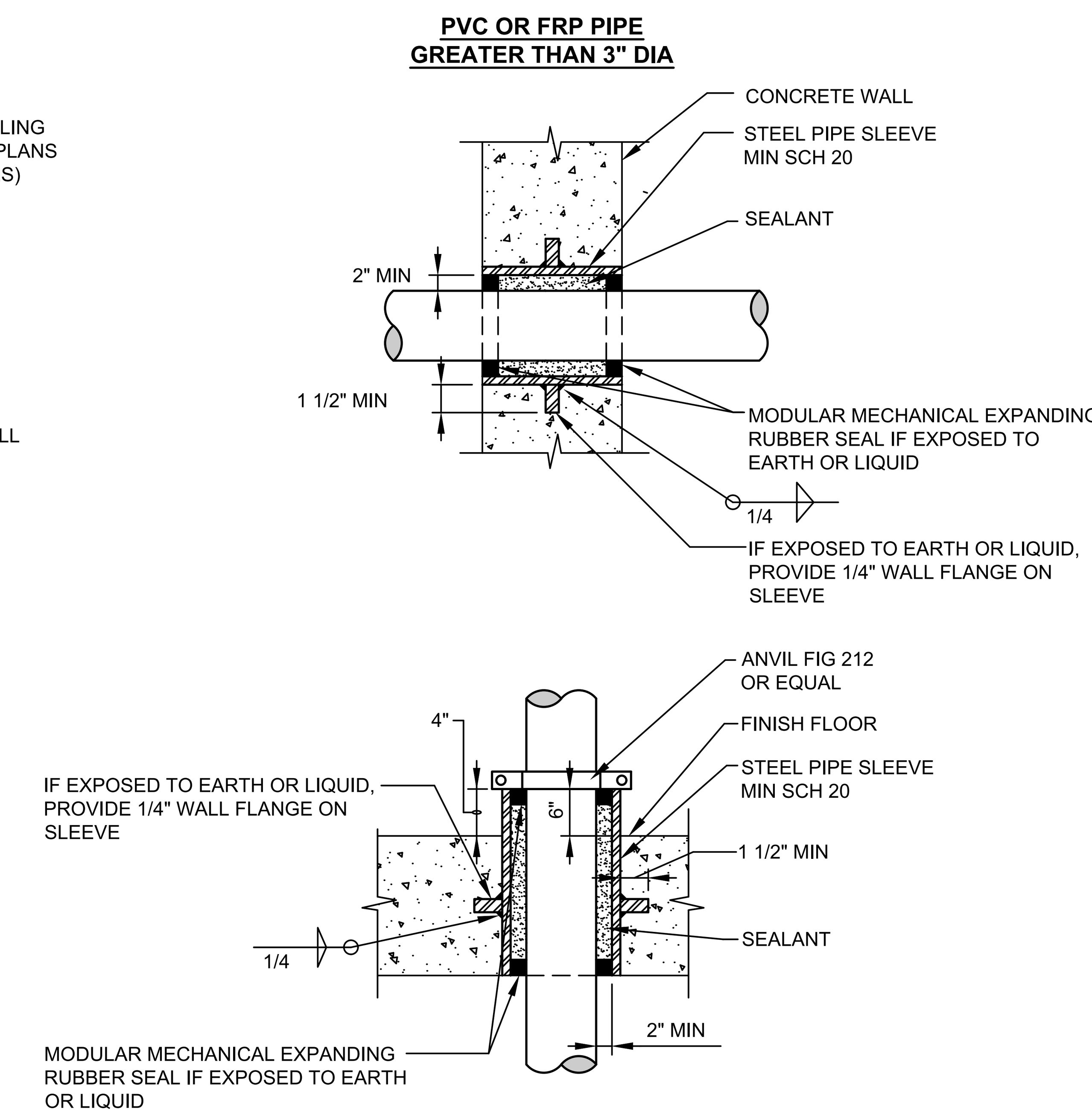


CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
PIPE SYMBOLS, PROCESS PIPING ID AND EQUIPMENT ID

SHEET: M-1
OF: 5
JOB NO.: 20859
DWG: M_STND_DETL





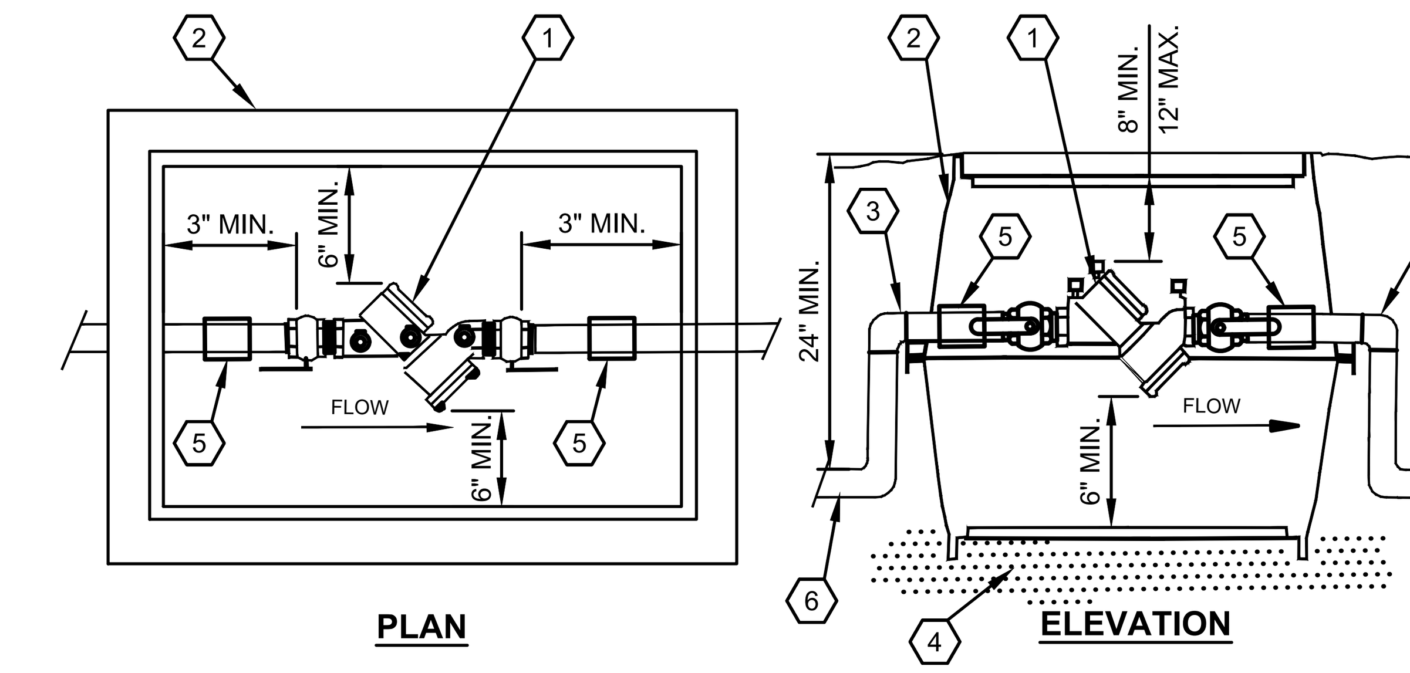


NOTES:

1. FOR EXISTING CONCRETE OR PRECAST CONCRETE, AN OPENING SHALL BE PROVIDED OF ADEQUATE SIZE TO ALLOW FOR INSTALLATION OF PENETRATION SHOWN ON THIS DETAIL. THE OPENING SHALL BE FILLED WITH NON-SHRINK GROUT AFTER PIPE INSTALLATION. IF OPENING IS PROVIDED BY CORE DRILLING, RESULTING SMOOTH CONCRETE SURFACES SHALL BE ROUGHENED AND A BONDING AGENT SHALL BE APPLIED PRIOR TO FILLING WITH GROUT.
2. FOR ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS SEE S SHEETS
3. FOR CMU WALLS, CORE DRILL HOLE. PROVIDE MIN 8" THICK NON-SHRINK GROUT ENCASEMENT ALL AROUND PIPE SLEEVE IN WALL. FILL ANNULAR OPENING WITH ELASTOMERIC SEALANT.

1 TYP PIPE PENETRATIONS THROUGH CONCRETE WALLS AND FLOORS DETAILS

NOT TO SCALE



LEGEND

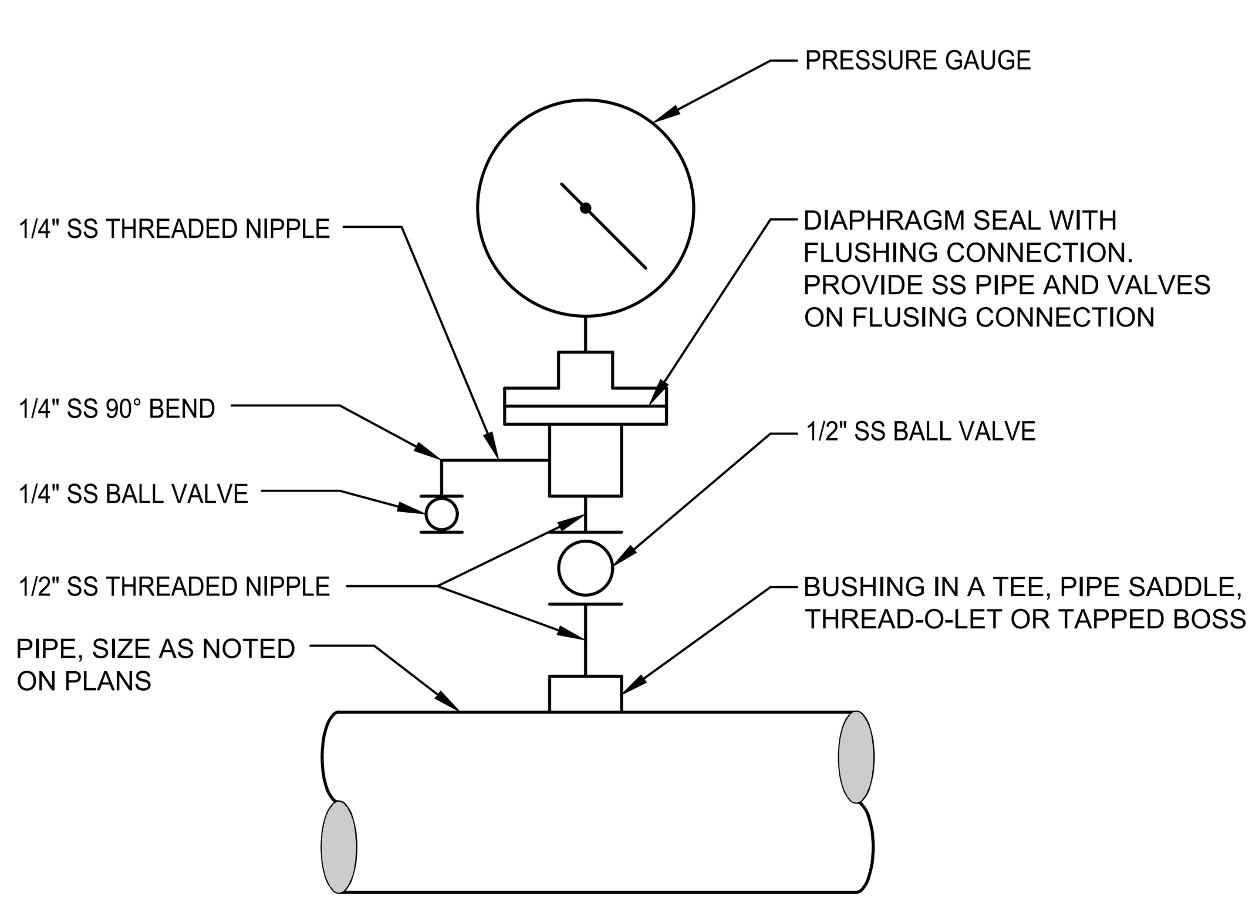
1. STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY (DCVA).
2. METER BOX. MID STATES, RAVEN OR CARSON.
3. BENDS MAY BE LOCATED INSIDE OR OUTSIDE OF BOX SO LONG AS SUFFICIENT ROOM IS ALLOWED AT EACH END FOR VALVE OPERATOR AND DCVA REPAIR OR MAINTENANCE.
4. PROVIDE FREE DRAINING BACKFILL BELOW BOX.
5. UNION
6. COPPER PIPE BETWEEN METER AND ASSEMBLY

NOTES:

1. ALL TEST COCKS SHALL HAVE BRASS PLUGS.
2. TEST COCKS SHALL FACE UP OR SIDEWAYS, WHICHEVER IS MORE ACCESSIBLE.
3. COMPLETE ALL WORK IN ACCORDANCE WITH STATE, CITY AND SUPPLIER STANDARDS.
4. SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL DCVA IS APPROVED BY THE CITY AND TESTED/CERTIFIED BY A WASHINGTON STATE LICENSED BACKFLOW ASSEMBLY TESTER.
5. PRESSURE TEST AND DISINFECT PER A.W.W.A. STANDARDS.

4 TYP DOUBLE CHECK VALVE ASSEMBLY DETAIL

NOT TO SCALE

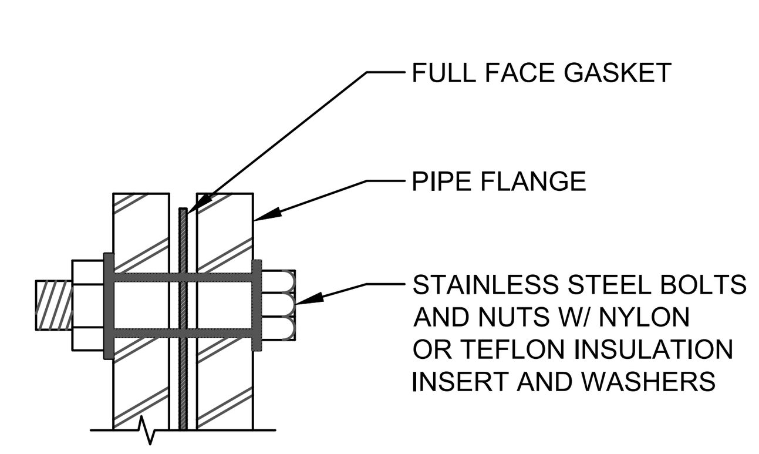


NOTE:

GAUGES ON POTABLE WATER DO NOT HAVE DIAPHRAGM SEAL, PROVIDE SNUBBER.

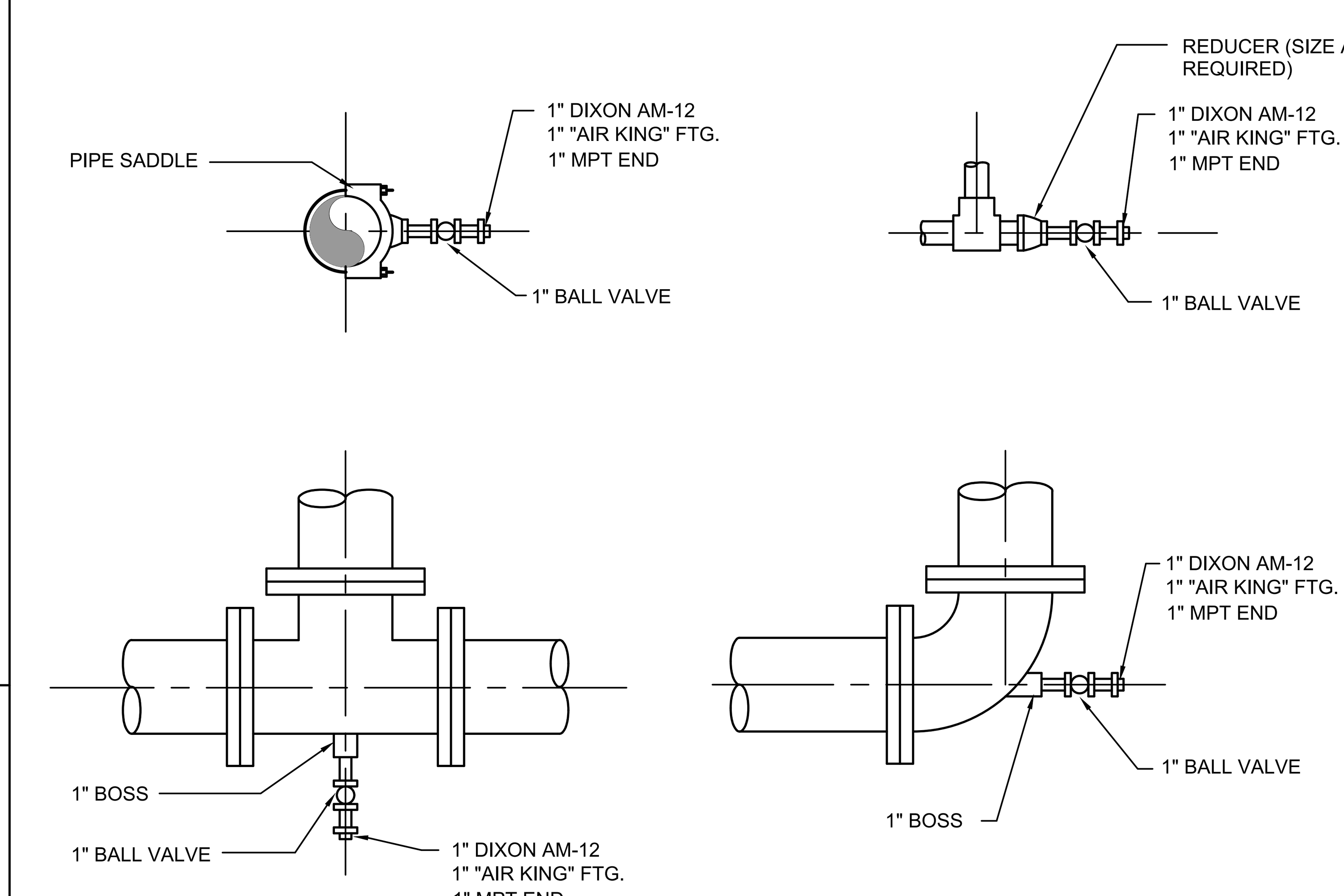
3 TYP PRESSURE GAUGE (LIQUID SERVICE) DETAIL

NOT TO SCALE



4 TYP DIELECTRIC COUPLING

NOT TO SCALE



NOTES:

1. FOR SAMPLE CONNECTION INSTALL A 90° ELBOW IN LIEU OF END CONNECTION SHOWN. ELBOW SHALL BE ORIENTED TO DISCHARGE VERTICALLY DOWN FOR EASY SAMPLE COLLECTION.
2. 1" FLUSHING/SAMPLE PIPE, FITTINGS AND BALL VALVE SHALL BE 304 STAINLESS STEEL.

5 TYP TYPICAL FLUSHING/SAMPLING CONNECTION DETAILS

NOT TO SCALE

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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No.	REVISION	DATE	APPD

NANCY J. WELCH, STATE OF WASHINGTON, 42805, REGISTERED PROFESSIONAL ENGINEER

10/10/21

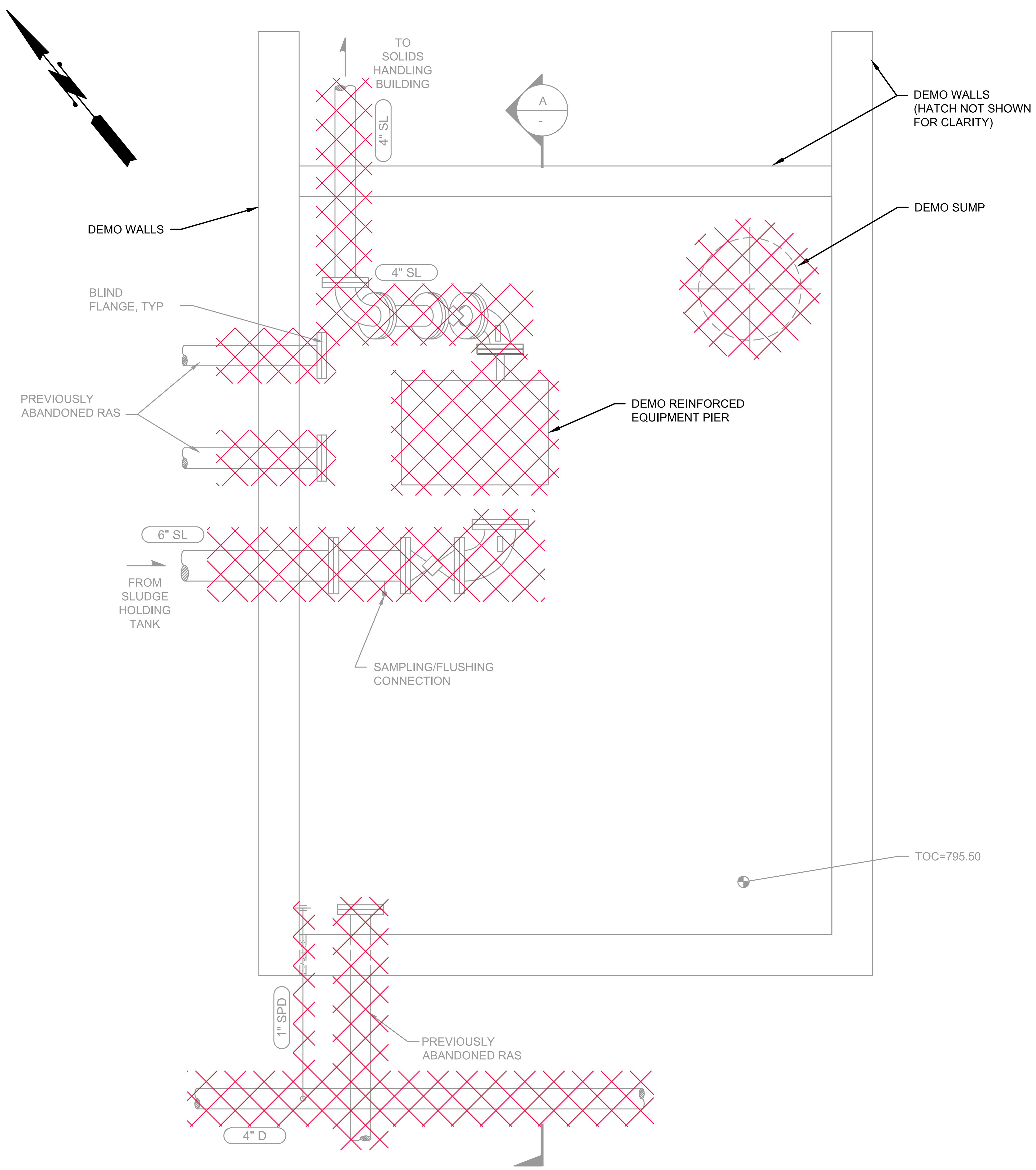
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

MISCELLANEOUS DETAILS

SHEET: M-2
OF: 5

JOB NO.: 20859
DWG: M_STND_DETL



OPERATIONS BUILDING DEMOLITION PLAN

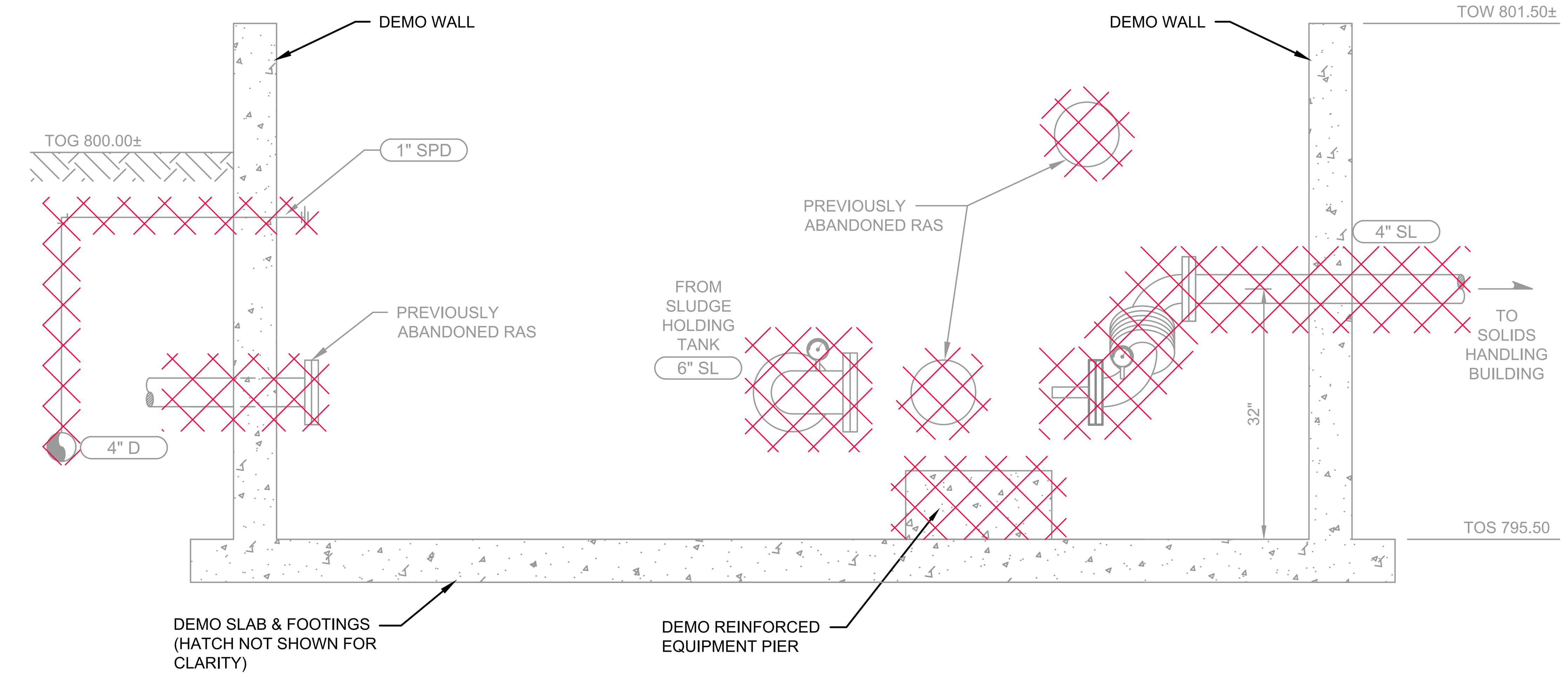
SCALE: 3/4"=1'-0"

NOTES:

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING INFLUENT AND EFFLUENT WAS PUMP PIPING AND APPURTENANCES, ABANDONED RAS BLIND FLANGES, AND EXISTING SUMP PUMP.
2. CONTRACTOR SHALL REMOVE EXISTING REINFORCED WALLS AND SLAB. DEMOLITION HATCH NOT SHOWN FOR CLARIITY.
3. REFER TO SPECULATION 01110 FOR ORDER OF WORK AND SLUDGE HOLDING TANK ISOLATION.
4. REFER TO G-7 FOR SITE PIPE DEMOLITION.
5. CONTRACTOR SHALL REMOVE AND DISPOSE OF TEMPORARY CONSTRUCTION FENCE.

LEGEND:

ITEMS TO BE DEMOLISHED AND REMOVED FROM SITE



SECTION A

SCALE: 3/4=1'-0"

EXISTING WAS PUMP EFFLUENT PIPING AND APPURTENANCES

EXISTING ABANDONED RAS BLIND FLANGE

EXISTING WAS PUMP INFLUENT PIPING AND APPURTENANCES

EXISTING SUMP

EXISTING OPERATIONS BUILDING FOUNDATION

SEE NOTE 5

EXISTING OPERATIONS BUILDING SLUDGE ROOM (LOOKING NORTHEAST)

NOT TO SCALE

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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YAKIMA, WA 98901 • (509) 453-4833

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No.	REVISION	DATE	APPD

10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
EXISTING OPERATIONS BUILDING DEMOLITION PLAN AND SECTION

SHEET: M-3
OF: 5

JOB NO.: 20859
DWG: M_OPS_EX_D

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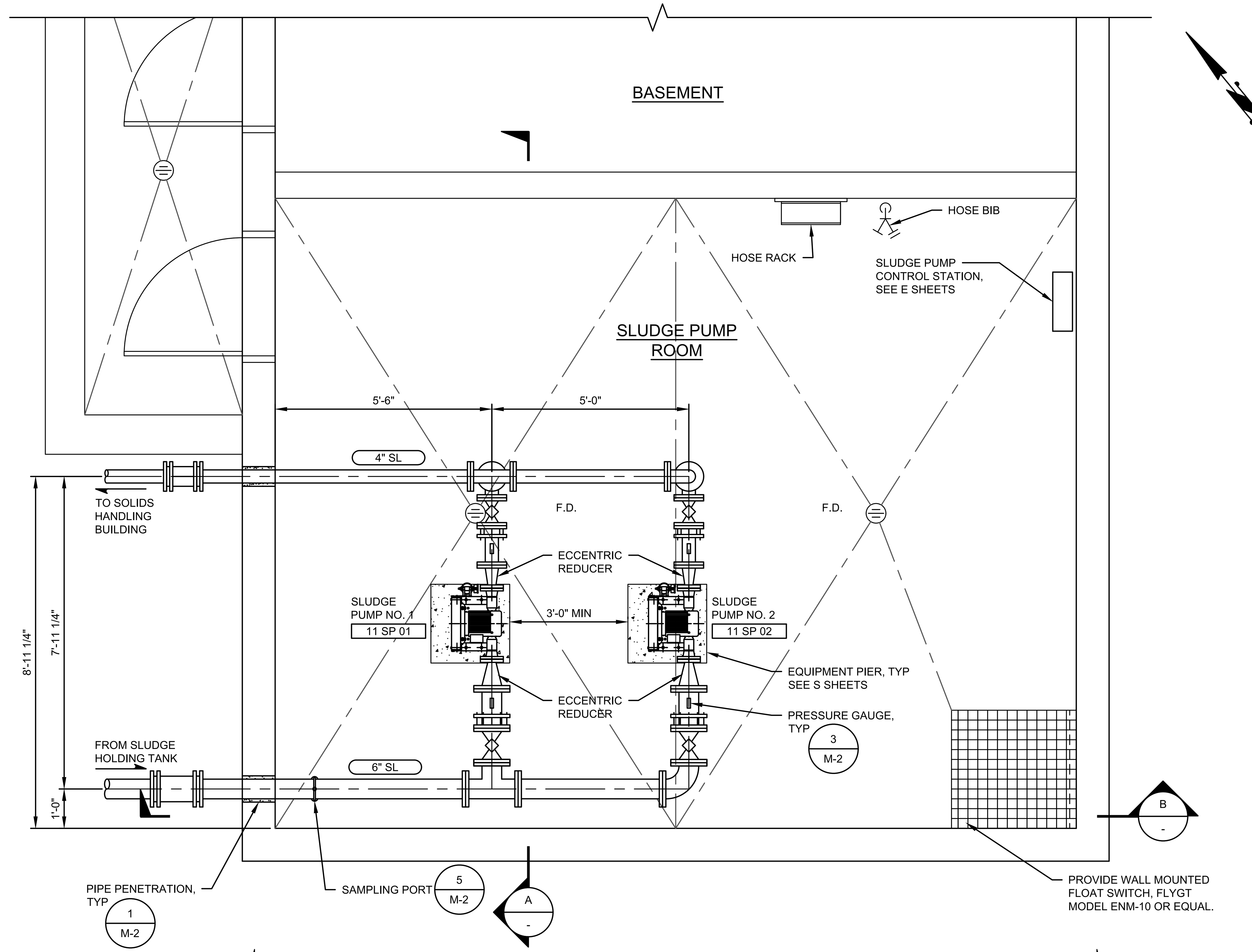
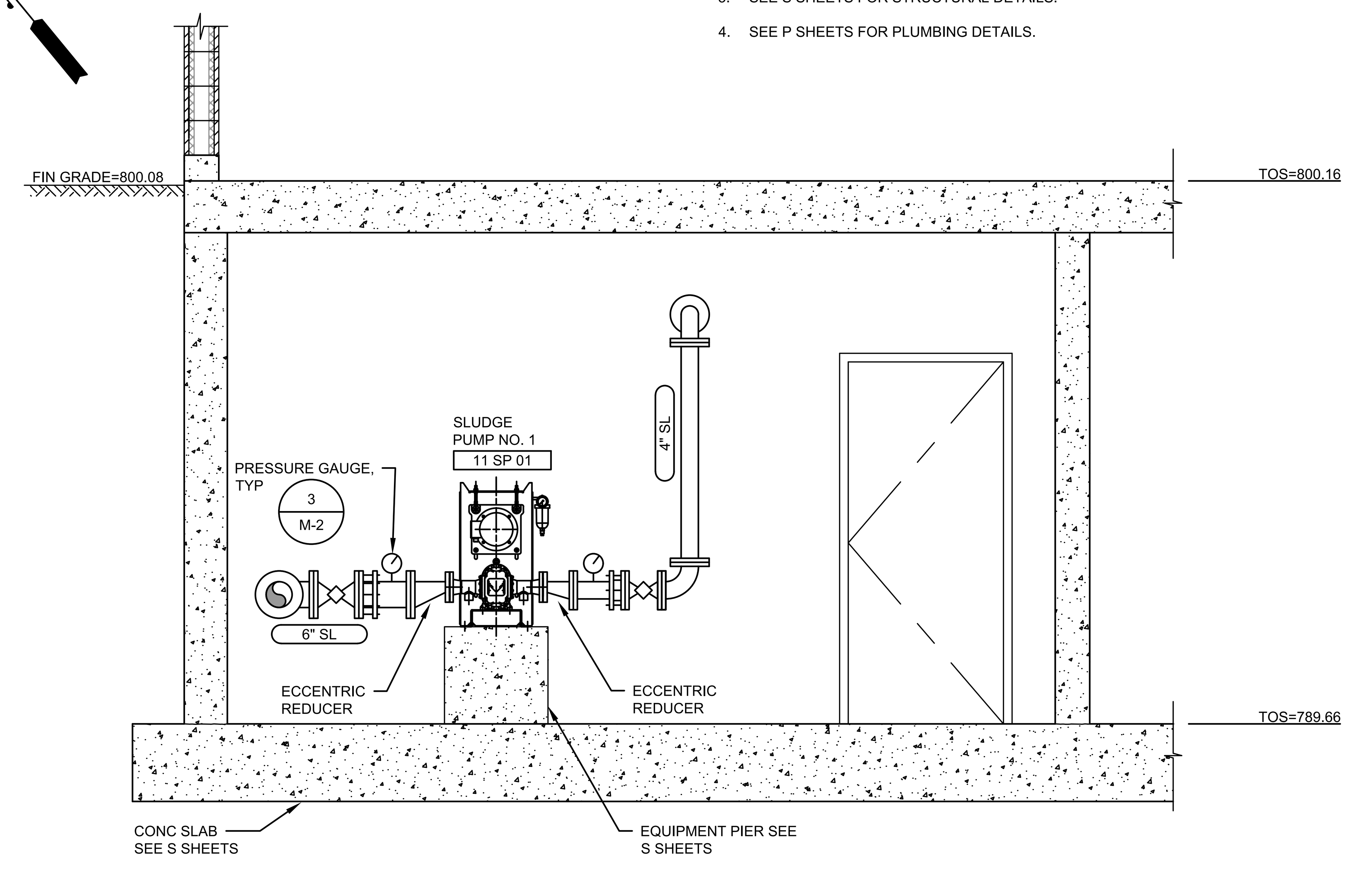
NOTES:

1. FOR PIPE SUPPORTS, SEE SPECIFICATION 15066.
2. FOR PIPE PENETRATIONS, SEE 1/M-2
3. SEE S SHEETS FOR STRUCTURAL DETAILS.
4. SEE P SHEETS FOR PLUMBING DETAILS.



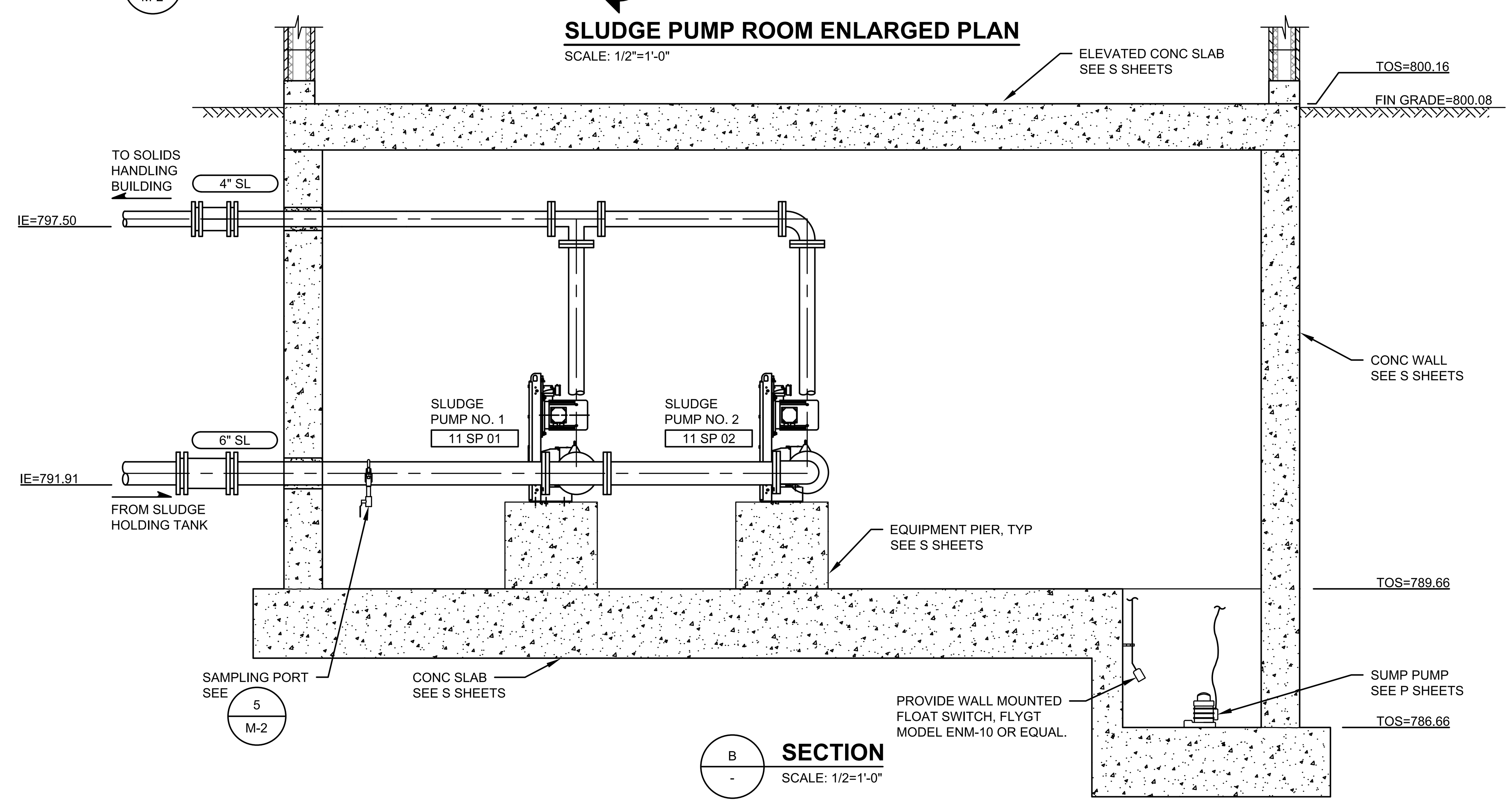
SLUDGE PUMP ROOM ENLARGED PLAN

SCALE: 1/2"=1'-0"



A **SECTION**

SCALE: 1/2=1'-0"



B **SECTION**

SCALE: 1/2=1'-0"

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144 • (206) 284-0860

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10/10/21

CITY OF BRIDGEPORT

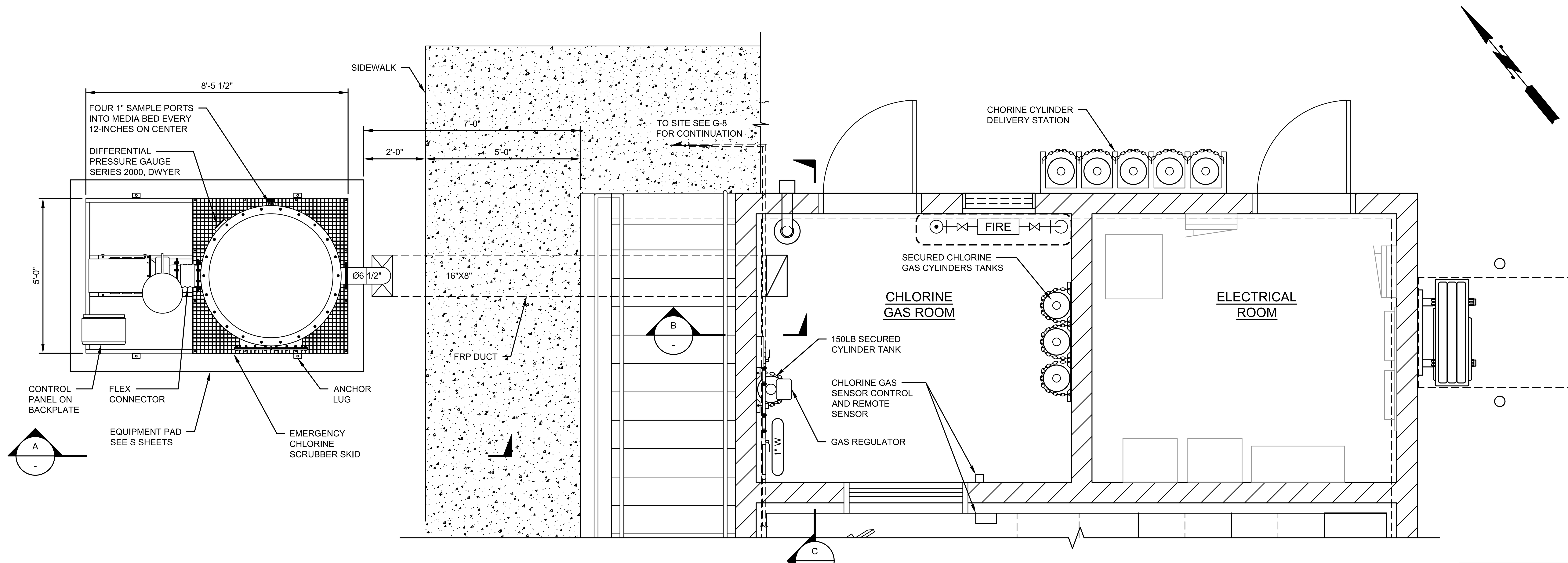
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

OPERATIONS BUILDING SLUDGE PUMP ROOM - PLAN AND SECTIONS

SHEET: M-4
OF: 5

JOB NO.: 20859
DWG: M_OPS_PLN

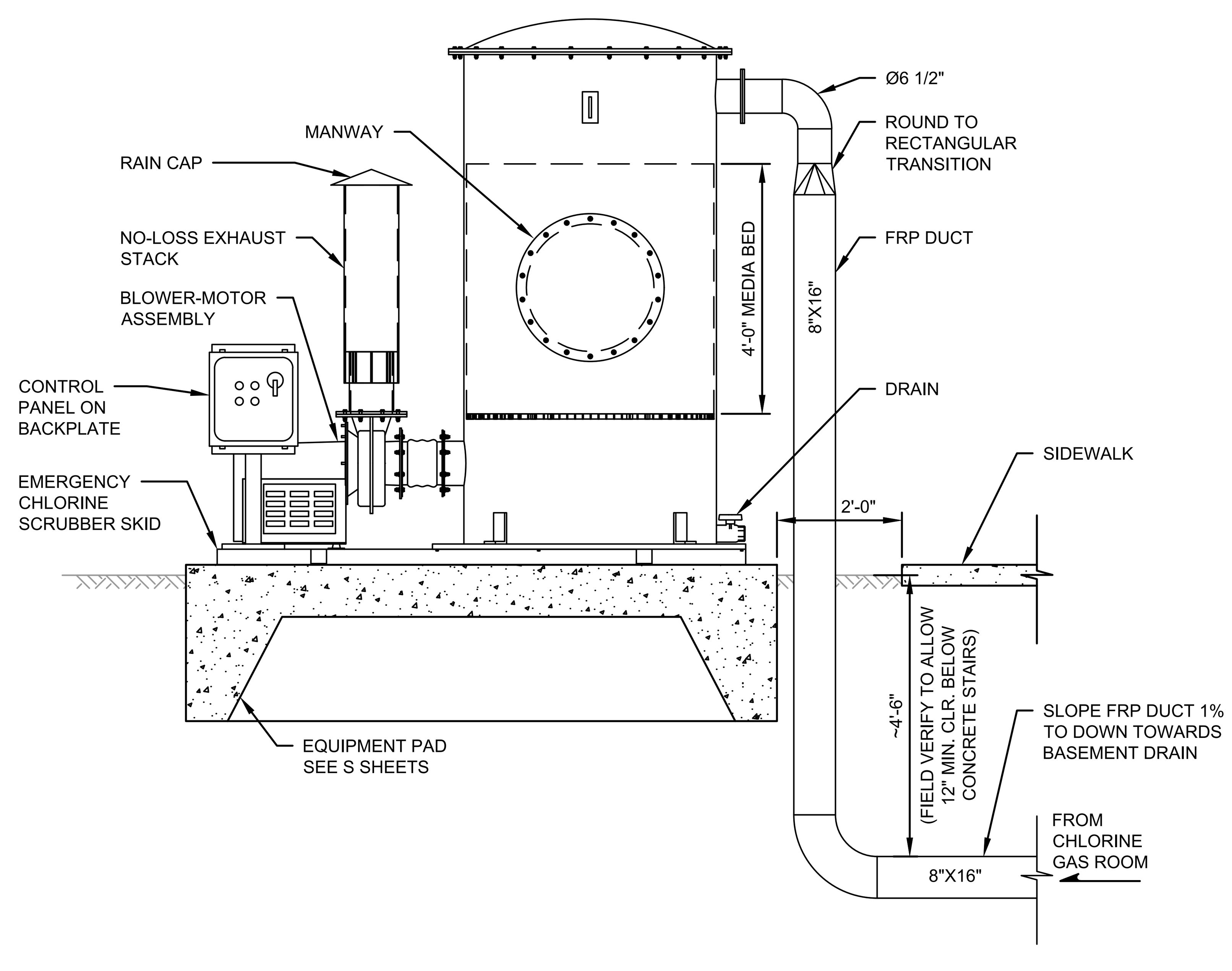


EMERGENCY CHLORINE SCRUBBER & CHLORINE GAS ROOM ENLARGED PLAN

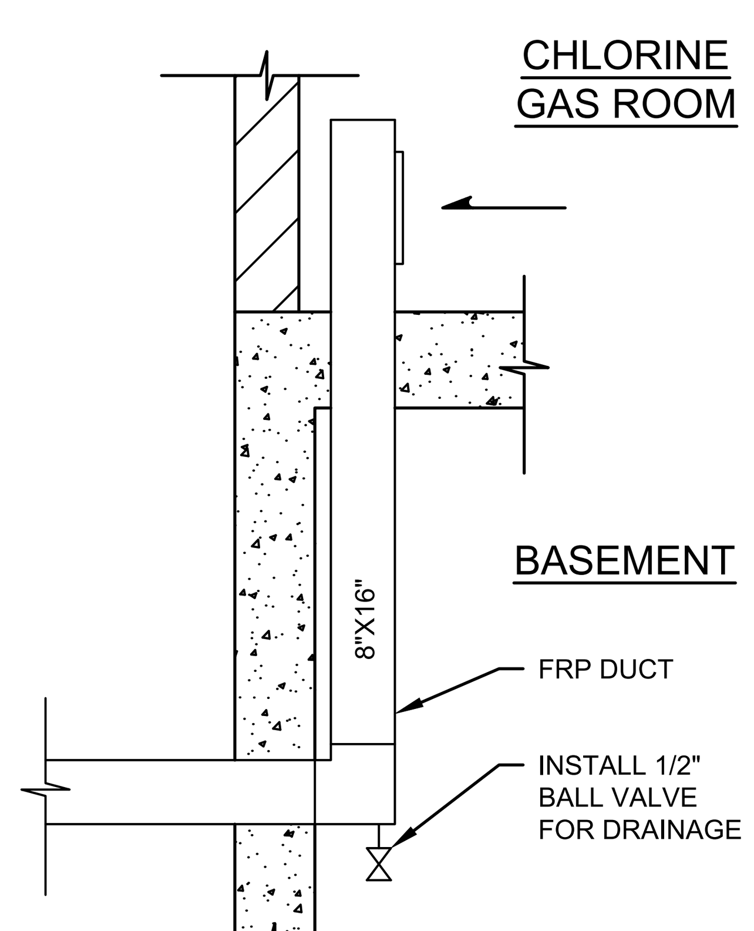
SCALE: 1/2"=1'-0"

NOTES:

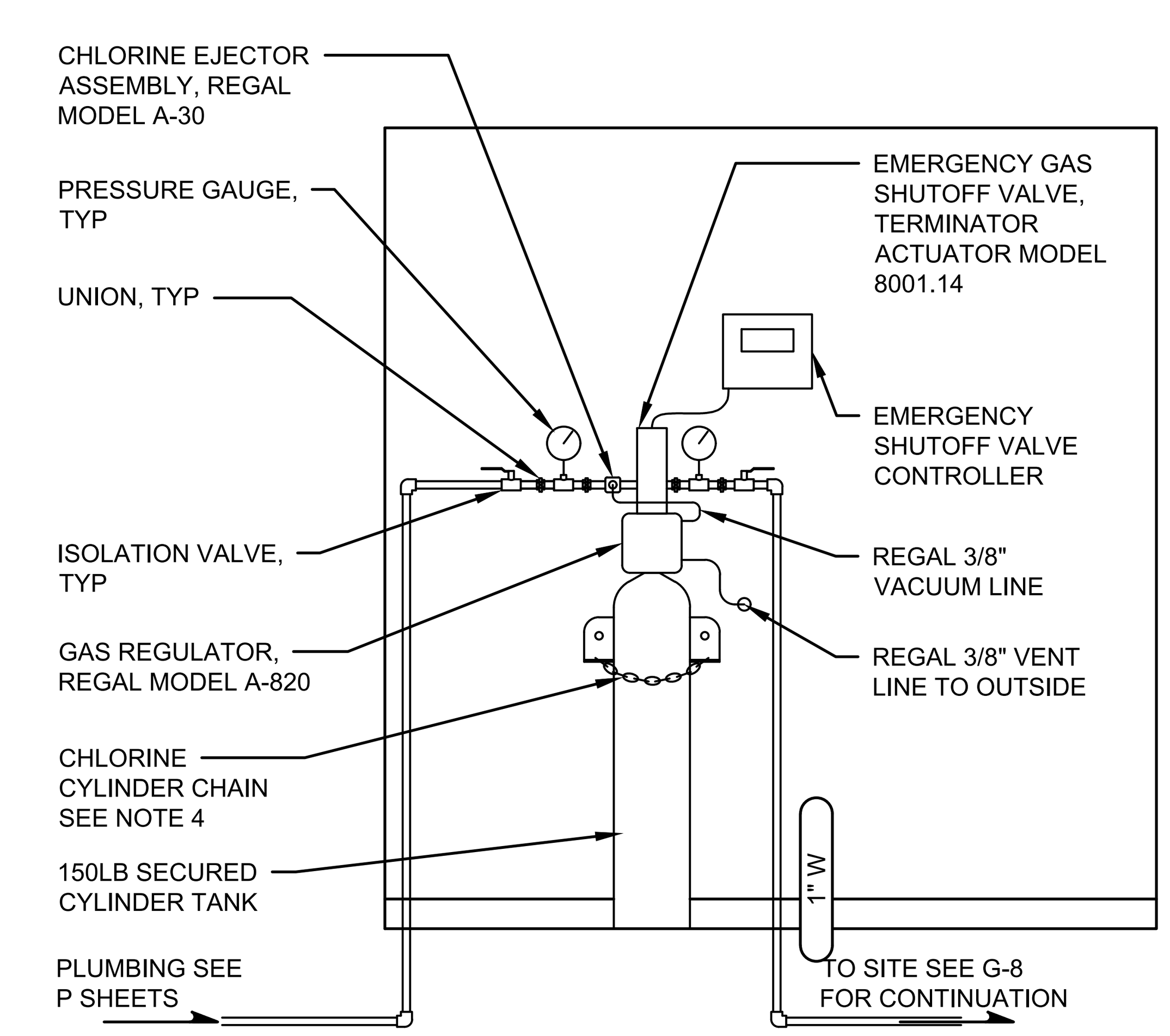
1. FOR PIPE SUPPORTS, SEE SPECIFICATIONS.
2. FOR PIPE PENETRATIONS, SEE 1 / M-2
3. CHLORINATION EQUIPMENT SHALL BE REINSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
4. CHLORINE CYLINDER CHAINS SHALL BE MANUFACTURED BY USA SAFETY OR APPROVED EQUAL.



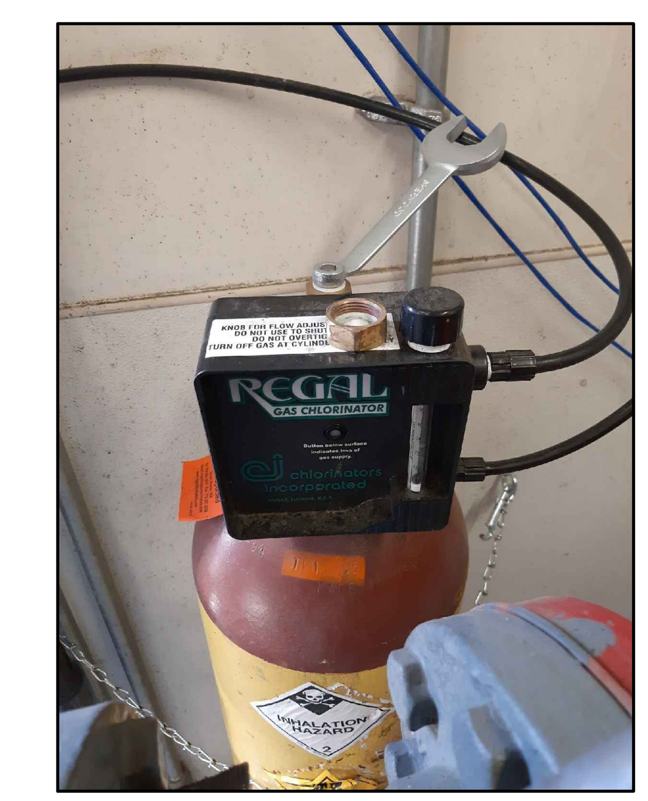
A SECTION
SCALE: 1/2=1'-0"



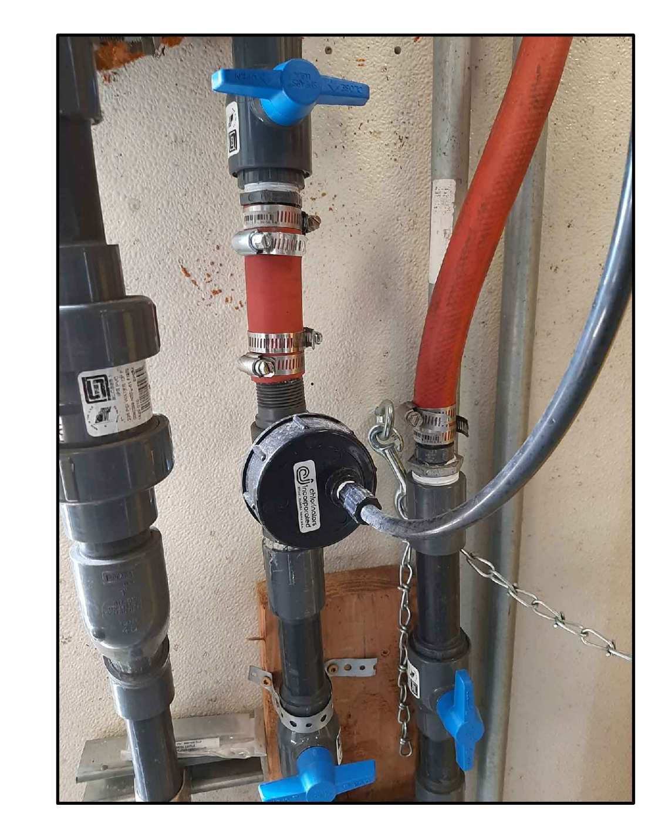
B SECTION
SCALE: 1/2=1'-0"



C SECTION
SCALE: 1/2=1'-0"



GAS REGULATOR



CHLORINE GAS INJECTION

EXISTING CHLORINATION EQUIPMENT (TEMPORARY SETUP)

NOT TO SCALE

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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No.	REVISION	DATE	APPD

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10/10/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
OPERATIONS BUILDING CHLORINE ROOM - PLAN AND SECTIONS

SHEET: M-5
OF: 5
JOB NO.: 20859
DWG: M_OPS_PLN

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BUILDING DATA

CODES:

IBC	2018	INTERNATIONAL BUILDING CODE
IMC	2018	INTERNATIONAL MECHANICAL CODE
IFC	2018	INTERNATIONAL FIRE CODE
UPC	2018	UNIFORM PLUMBING CODE
WSEC	2018	WASHINGTON STATE ENERGY CODE

BUILDING DESCRIPTION

A NEW CMU BUILDING WITH METAL ROOFING AND CONCRETE FOUNDATION INCLUDING A LAB AREA, ELECTRICAL ROOM, CHLORINE ROOM, AND FULL BASEMENT.

GROSS BUILDING AREA

GROUND FLOOR: 865 SF
BASEMENT: 865 SF
BUILDING (OVERALL): 1,730 SF

IBC OCCUPANCY (IBC CHAPTER 3)

F-1:	ELECTRICAL ROOM, BASEMENT, SLUDGE PUMP ROOM
B:	LAB/OFFICE, LOCKER ROOM
H-3:	CHLORINE GAS ROOM

ALLOWABLE BUILDING AREA (IBC 506.2)

F-1 (TYPE V.B.):	8,500 SF (NON-SPRINKLERED)
B (TYPE V.B.):	9,000 SF (NON-SPRINKLERED)
H-3 (TYPE V.B.):	5,000 SF (SPRINKLERED)

FIRE BARRIER SEPARATION OF OCCUPANCIES (IBC 508.4)

B to F-1:	NONE
H-3 to F-1:	1 HOUR (WHEN "H" OCCUPANCY SPRINKLERED)
H-3 to B:	1 HOUR (WHEN "H" OCCUPANCY SPRINKLERED)

FIRE RESISTIVE BUILDING ELEMENTS REQUIREMENTS (IBC 601)

PRIMARY STRUCTURAL FRAME:	0 HOURS
BEARING WALLS:	0 HOURS
NONBEARING WALLS:	0 HOURS
FLOOR ASSEMBLIES:	0 HOURS
ROOF ASSEMBLIES:	0 HOURS

FIRE RESISTIVE EXTERIOR WALL REQUIREMENTS (IBC 602)

ALL SEPARATION DISTANCES ≥ 30 FT: 0 HOURS

GENERAL NOTES:

1. ALL DIMENSIONS ARE TO FACE OF FRAMING, TO FACE OF MASONRY, OR TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.
2. NOT ALL WALL PENETRATIONS MAY BE SHOWN. COORDINATE SIZE AND LOCATIONS WITH MECHANICAL, PLUMBING, HVAC, AND ELECTRICAL SHEETS.
3. SEE STRUCTURAL SHEETS FOR FOUNDATION, WALL, AND ROOF FRAMING PLANS.
4. IDENTIFICATION MARK SHALL BE APPLIED TO ALL INSULATION MATERIALS AND INSULATION INSTALLED SUCH THAT THE MARK IS READILY OBSERVABLE DURING INSPECTION

ROOM MATERIAL AND FINISH SCHEDULE

ROOM NAME	FLOOR		BASE		WALLS: NORTH		WALLS: SOUTH		WALLS: EAST		WALLS: WEST		CEILING	
	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH
LAB/OFFICE	CONC	CSH	RBR	FF	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS
LOCKER ROOM	CONC	CSH	RBR	FF	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS	GWB	PTS
ELECTRICAL ROOM	CONC	CSH	N/A	N/A	CMU	PTS	CMU	PTS	CMU	PTS	CMU	PTS	GWB	PTS
CHLORINE GAS ROOM	CONC	CSH	N/A	N/A	CMU	PTS	CMU	PTS	CMU	PTS	CMU	PTS	GWB - 1 HR	PTS
BASEMENT	CONC	CSH	N/A	N/A	CONC	PTS	CONC	PTS	CONC	PTS	CONC	PTS	CONC	PTS
SLUDGE PUMP ROOM	CONC	CSH	N/A	N/A	CONC	PTS	CONC	PTS	CONC	PTS	CONC	PTS	CONC	PTS

CMU	-CONCRETE MASONRY UNIT	GWB - 1 HR	-1 HR-RATED GYPSUM WALL BOARD
CONC	-CONCRETE	N/A	-NOT APPLICABLE
CSH	-CONCRETE SURFACE HARDENER	PTS	-PAINT TO SPECIFICATIONS
FF	-FACTORY FINISH	RBR	-RUBBER BASE
GWB	-GYPSUM WALL BOARD		

DOOR SCHEDULE

NO.	MATERIAL & TYPE	DOOR SIZE: WIDTH x HEIGHT x THICKNESS	DOOR TYPE	FRAME TYPE	U-FACTOR	FINISH	HARDWARE GROUP
1	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
2	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
3	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
4	HOLLOW METAL INSULATED 1 HR FIRE RATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
5	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
6	HOLLOW METAL INSULATED	3'-0" x 7'-0" x 1 3/4"	A	A	0.37	PAINT	1
7	HOLLOW METAL	3'-0" x 7'-0" x 1 3/4"	A	A	N/A	PAINT	2

NOTE: FRAME THROAT VARIES, COORDINATE & VERIFY FRAME DEPTH W/ FINISHED WALL SECTION.

WINDOW SCHEDULE

NO.	TYPE	WINDOW SIZE: WIDTH x HEIGHT = AREA	QUANTITY	TOTAL VGA	U-FACTOR NFRC CERTIFIED
A	VINYL VERTICAL AWNING	4'-0" x 3'-4" = 13.3 SQ. FT.	3	40 SF	0.35
B	ALUMINUM FIXED 1 HR FIRE RATED	4'-0" x 3'-4" = 13.3 SQ. FT.	1	13.3 SF	N/A

NOTES:

1. ALL NEW EXTERIOR WINDOW GLAZING SHALL BE INSULATED LOW-E WITH ARGON DOUBLE GLAZING.
2. PROVIDE METAL SCREENS ON OPERABLE WINDOW OPENINGS.
3. PERCENTAGE OF GLAZING AREA TO EXTERIOR WALL: 156 SF / 27,000 SF = 0.6%.

ACCESSIBLE FIXTURE MOUNTING SCHEDULE

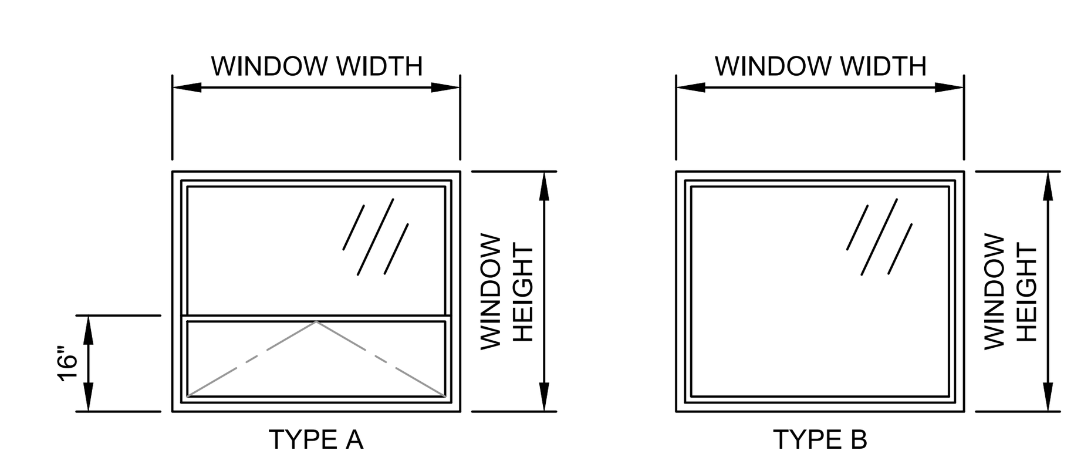
FIXTURE OR ACCESSORY	MOUNTING HEIGHT FROM FINISHED FLOOR
WATER CLOSET (TOILET)	17" MAXIMUM TO TOP OF RIM
GRAB BARS	33" MINIMUM TO 36" MAXIMUM TO TOP OF BAR
VERTICAL GAB BARS	39" MINIMUM TO 41" MAXIMUM TO BOTTOM OF BAR
LAVATORY	34" MAXIMUM TO TOP OF RIM
MIRROR	40" MAXIMUM TO BOTTOM OF REFLECTIVE SURFACE
PAPER TOWEL DISPENSER	40" MAXIMUM
TOILET SEAT COVER DISPENSER	40" MAXIMUM

LAB/OFFICE ELECTRICAL EQUIPMENT SCHEDULE

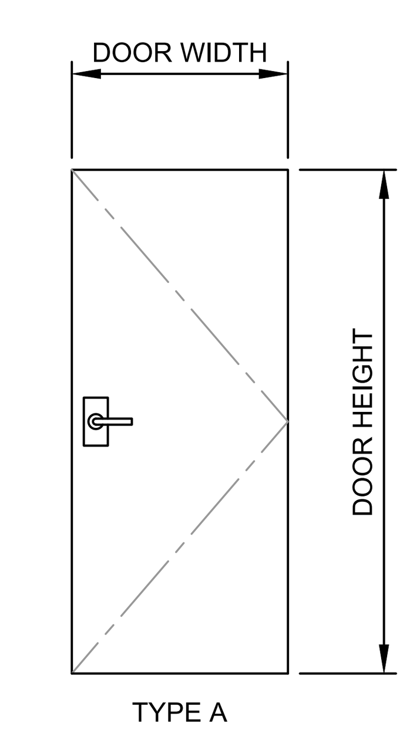
#	TYPE	VOLTAGE, PHASE, POWER
1	OFFICE WORKSTATION	120 V, 1 Ø,
2	WEATHER MONITORING STATION W/ CHLORINE GAS SENSOR ABOVE	120 V, 1 Ø,
3	MICROSCOPE	120 V, 1 Ø,
4	PH METER	120 V, 1 Ø,
5	STIRRER	120 V, 1 Ø,
6	BOD METER	120 V, 1 Ø,
7	AUTOCLAVE/STERILIZER	120 V, 1 Ø, 1,050 W
8	SPECTROPHOTOMETER	120 V, 1 Ø,
9	UNDERCOUNTER BOD INCUBATOR	120 V, 1 Ø,
10	WATER BATH	120 V, 1 Ø, 1200 W
11	BALANCE W/ SLAB	120 V, 1 Ø,
12	DESSICATOR	N/A
13	DRYING OVEN	120 V, 1 Ø, 1,100 W
14	MUFFLE FURNACE	240 V, 1 Ø, 2,240 W
15	VACUUM PRESSURE PUMP	120 V, 1 Ø, 1/8 HP

WALL TYPES & LEGEND

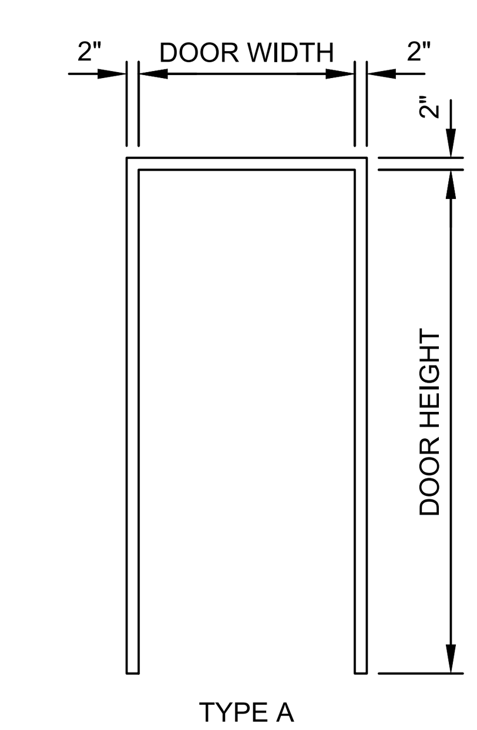
# (diamond)	DOOR NUMBER, SEE DOOR SCHEDULE THIS SHEET
# (oval)	WINDOW NUMBER, SEE WINDOW SCHEDULE THIS SHEET
1	8" INSULATED CMU WALL, RUNNING BOND PATTERN
2	8" INSULATED CMU WALL, RUNNING BOND PATTERN W/ ONE SIDE R-11 BATT INSULATION IN 2x4 FURRED WALL W/ 5/8" GWB
3	2x4 INTERIOR PARTITION WALL W/ 5/8" GWB EA SIDE



WINDOW FRAME TYPE
SCALE: NTS



DOOR TYPE
SCALE: NTS



DOOR FRAME TYPE
SCALE: NTS

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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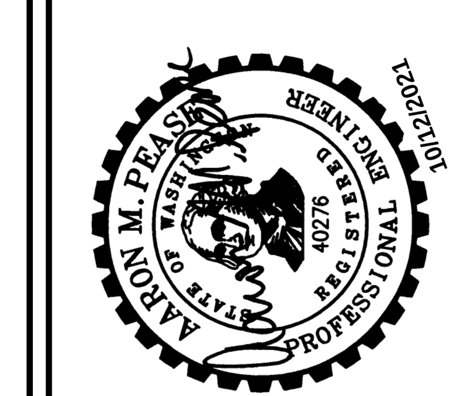
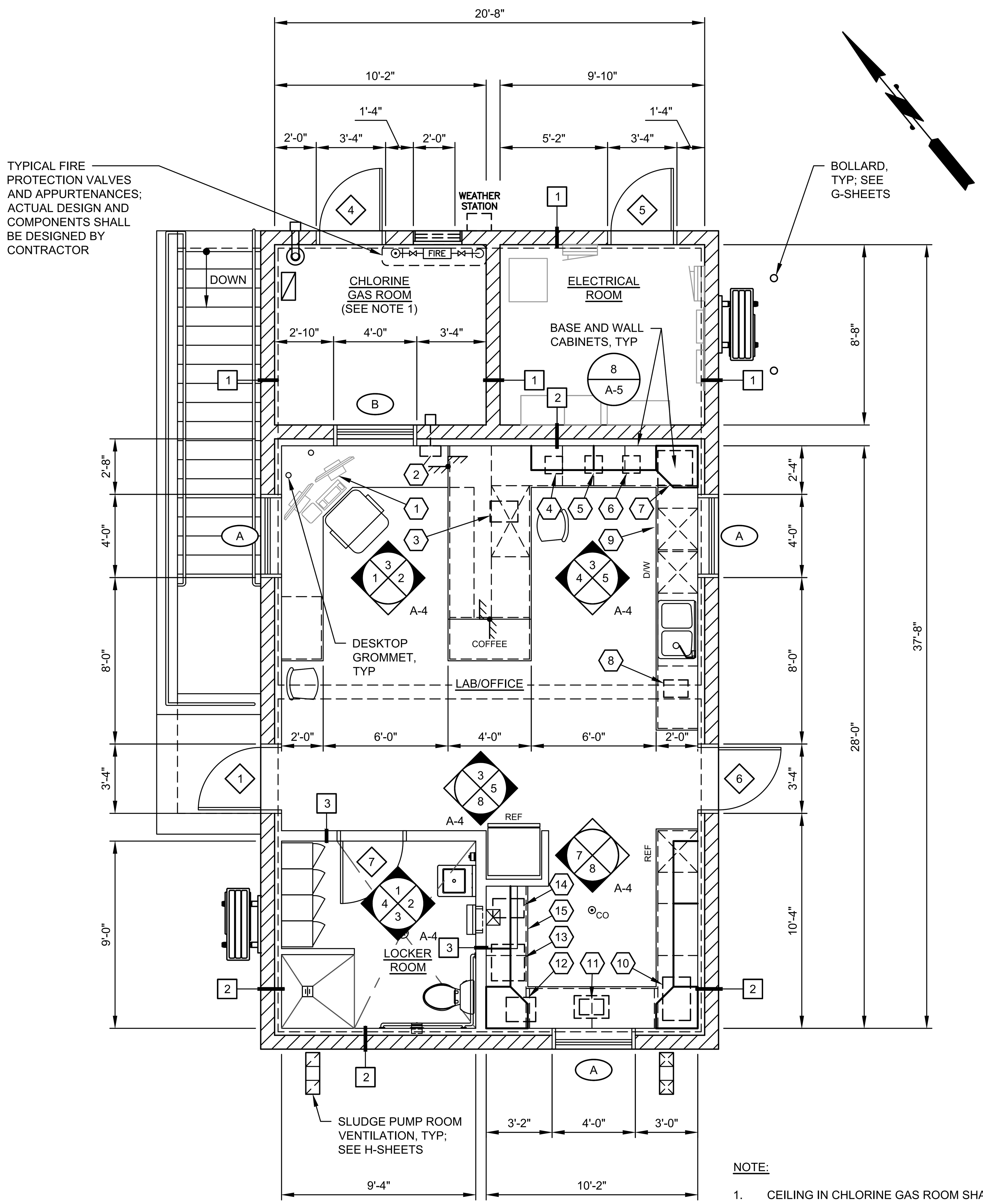
APPROVED: AMP

No.	REVISION	DATE	APPD



CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
ARCHITECTURAL NOTES AND SCHEDULES

SHEET: A-1
OF: 5
JOB NO.: 20859
DWG: A_OPS_PLN

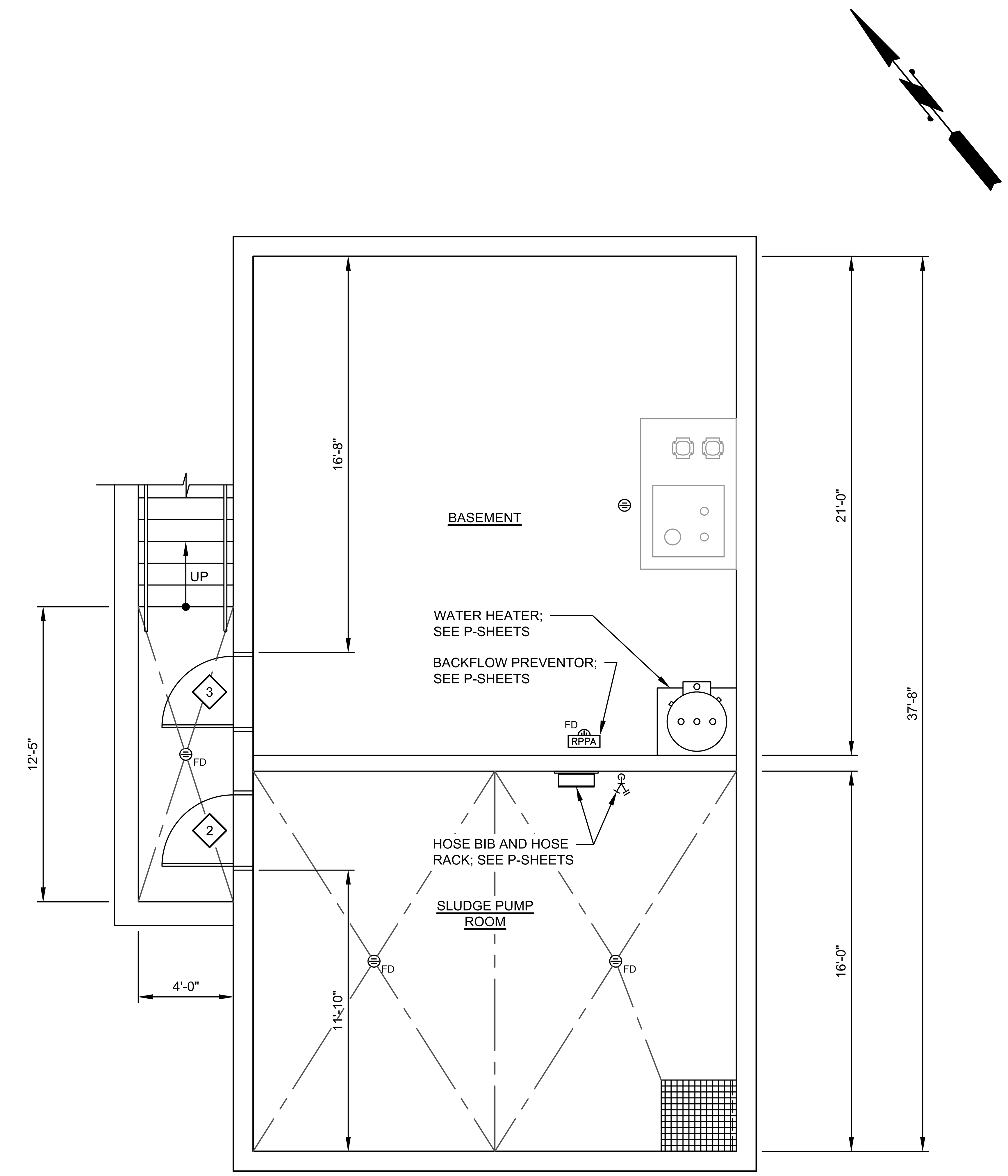


NOTE:

1. CEILING IN CHLORINE GAS ROOM SHALL BE 1 HOUR FIRE RATED PER ITEM NO. 21-1.1 OF THE 2018 IBC; TO INCLUDE 2 LAYERS OF 5/8" TYPE X RATED GWB FASTENED, TAPED AND MUDDED AT RIGHT ANGLES TO EACH OTHER. REF. IBC RATED ASSEMBLY DETAILS FOR REMAINDER OF INFORMATION.

UPPER FLOOR PLAN

SCALE: 1/4"=1'-0"



BASEMENT FLOOR PLAN

SCALE: 1/4"=1'-0"

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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DRAWN: ASD
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APPROVED: AMP

No.	REVISION	DATE	APPD

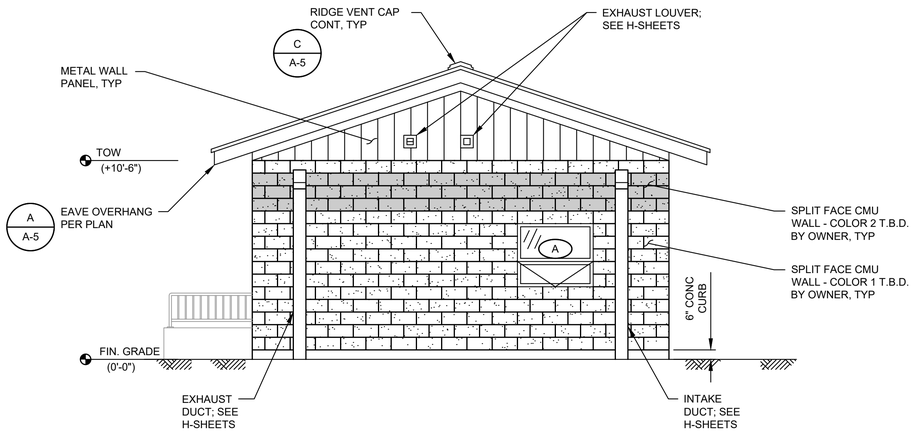
AARON M. PEASE, STATE OF WASHINGTON, 40276, REGISTERED PROFESSIONAL ENGINEER, 10/12/2021

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
LAB BUILDING FLOOR PLAN

SHEET: A-2
OF: 5

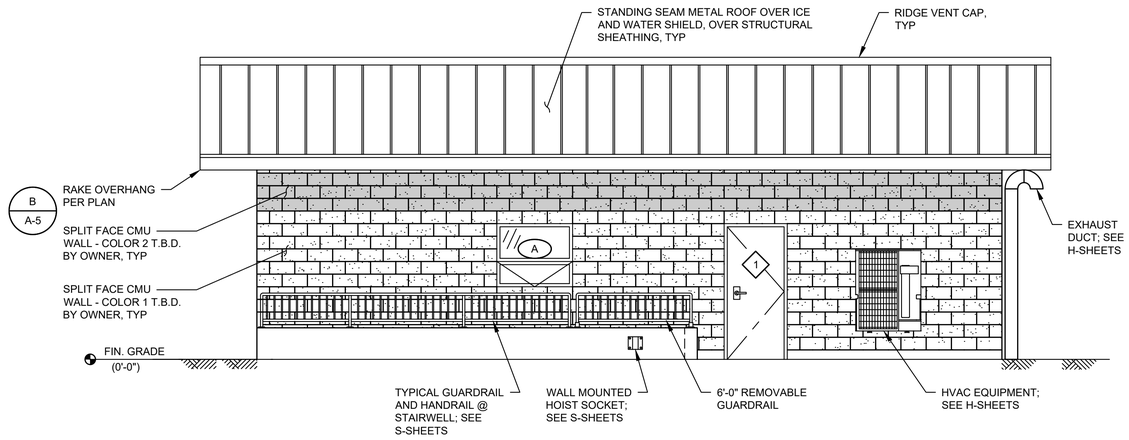
JOB NO.: 20859
DWG: A_OPS_PLN

I:\bridgeport\20859 - emergency fire response services\Planset\Architectural\A_OPS_PLN.dwg, 10/12/2021 1:59 PM, PAYTON PARKER



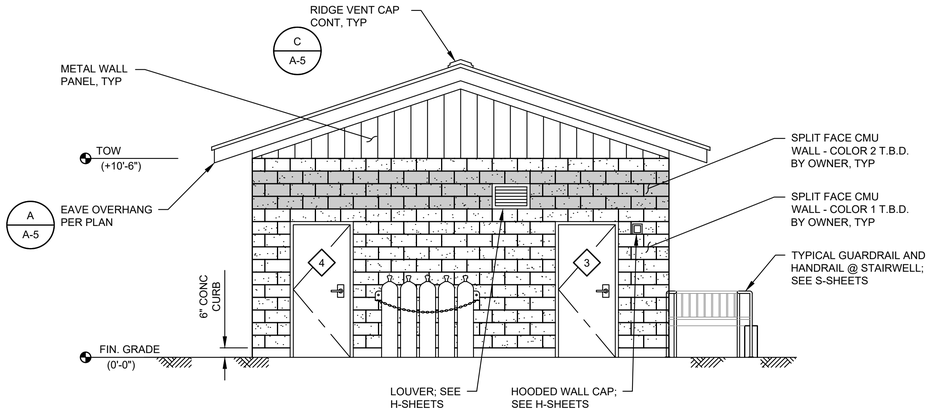
SOUTHWEST
EXTERIOR ELEVATION

SCALE: 1/4"=1'-0"



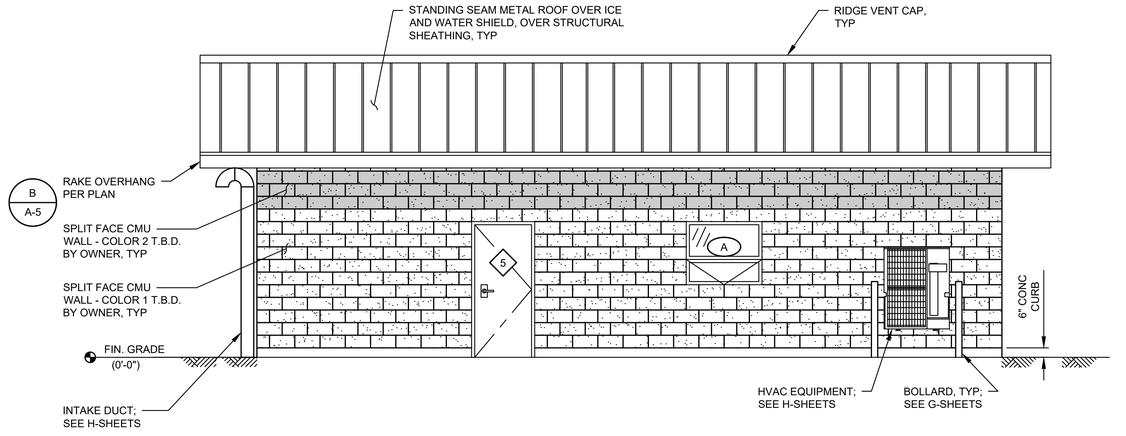
NORTHWEST
EXTERIOR ELEVATION

SCALE: 1/4"=1'-0"



NORTHEAST
EXTERIOR ELEVATION

SCALE: 1/4"=1'-0"



SOUTHEAST
EXTERIOR ELEVATION

SCALE: 1/4"=1'-0"

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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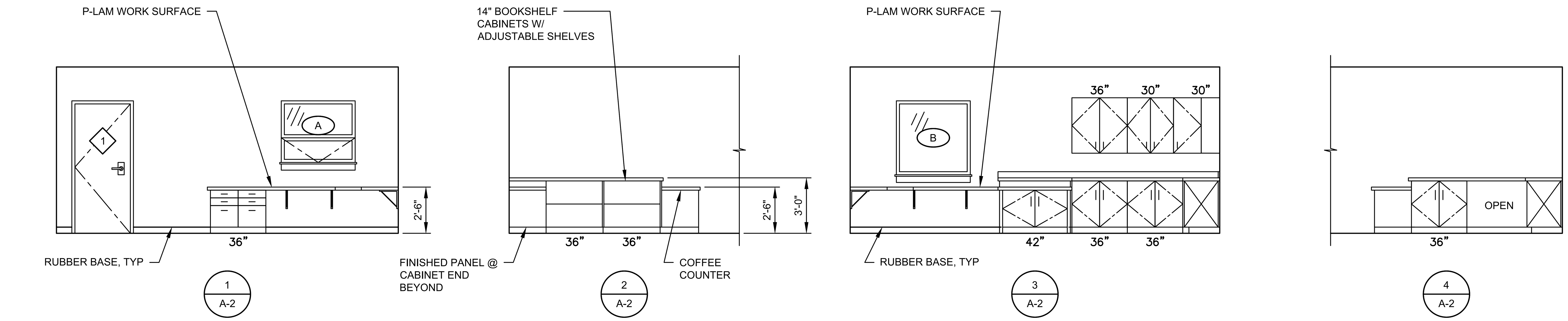
CITY OF BRIDGEPORT
WASHINGTON
DOUGLAS COUNTY

EMERGENCY FIRE RESPONSE SERVICES

EXTERIOR BUILDING ELEVATIONS

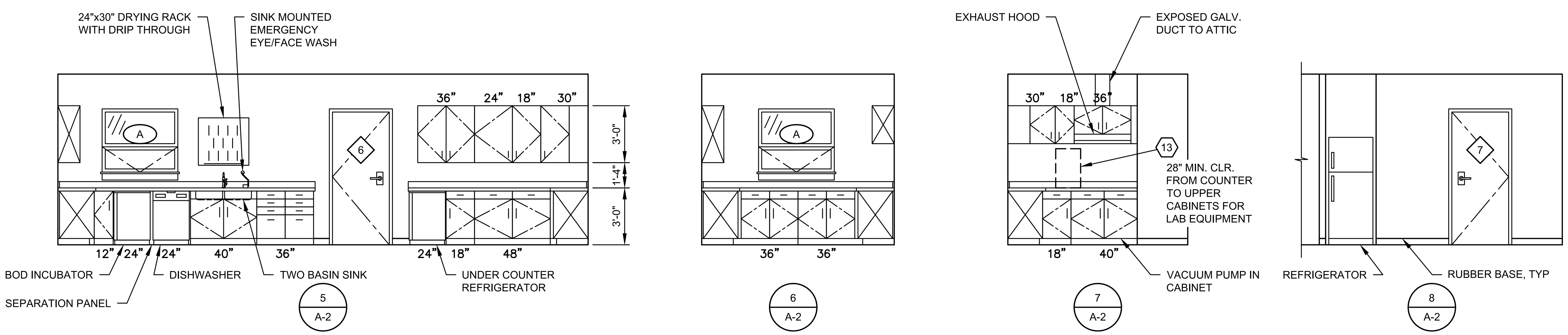
SHEET: A-3
OF: 5

JOB NO.: 20859
DWG: A_OPS_PLN



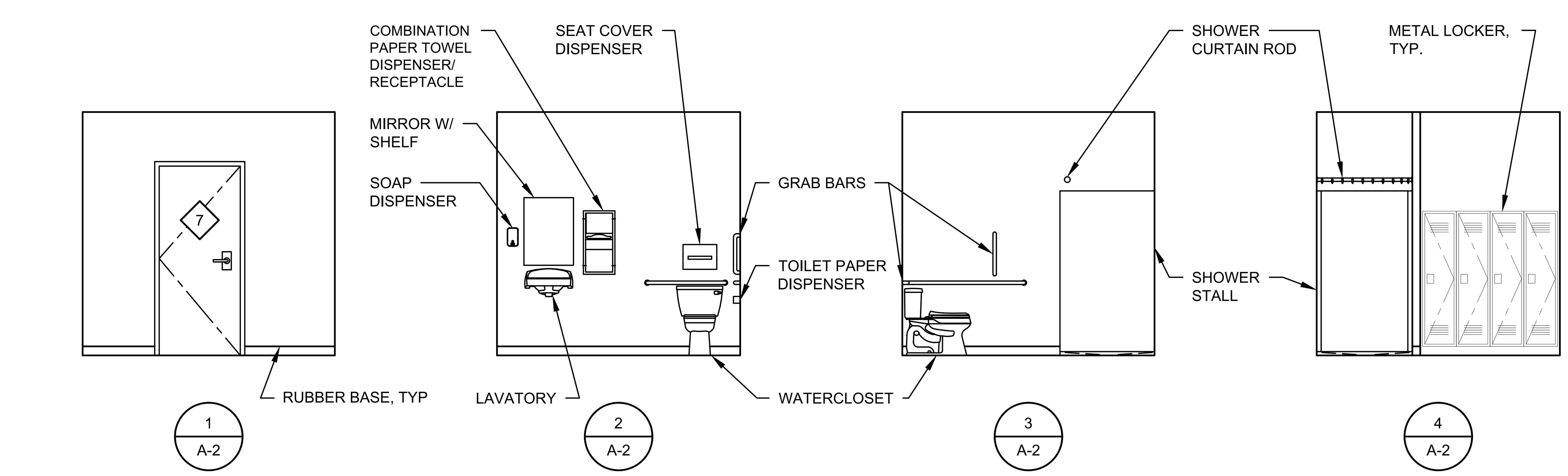
LAB/OFFICE
INTERIOR ELEVATIONS

SCALE: 1/4"=1'-0"



LAB/OFFICE
INTERIOR ELEVATIONS

SCALE: 1/4"=1'-0"



LOCKER ROOM
INTERIOR ELEVATIONS

SCALE: 1/4"=1'-0"

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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AARON M. PEASE STATE OF WASHINGTON 40276 REGISTERED PROFESSIONAL ENGINEER 10/12/2021

CITY OF BRIDGEPORT

DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

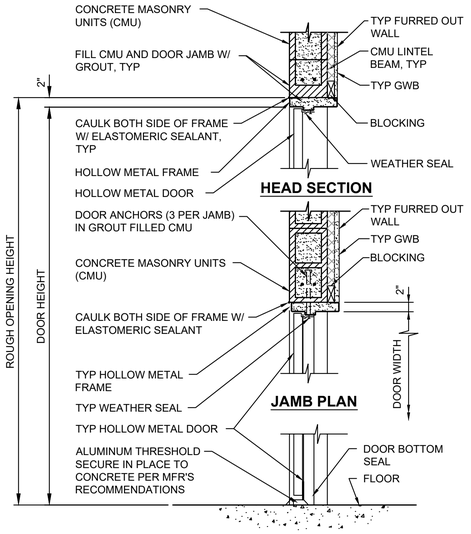
INTERIOR BUILDING ELEVATIONS

SHEET: A-4

OF: 5

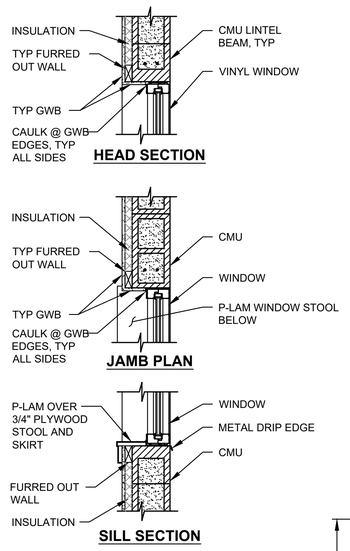
JOB NO.: 20859

DWG: A_OPS_PLN



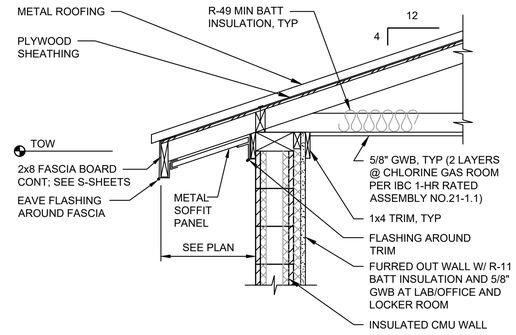
METAL DOOR FOR CMU WALL W/ FURRING DETAIL

1 / TYP — NOT TO SCALE



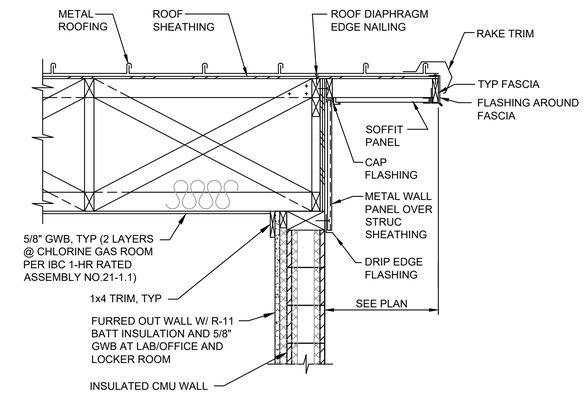
WINDOW SECTION

2 / TYP — NOT TO SCALE



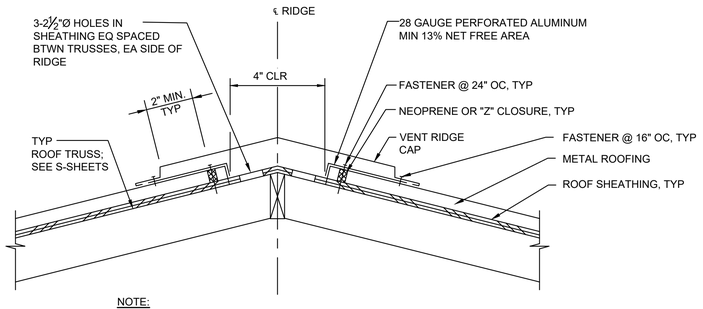
EAVE DETAIL

3 / A-3 — SCALE: 3/4"=1'-0"



RAKE DETAIL

4 / A-3 — SCALE: 3/4"=1'-0"

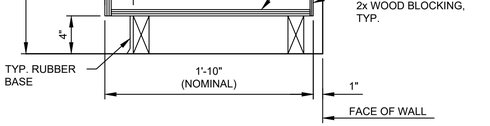


NOTE:

RIDGE CAP SHALL PROVIDE AT LEAST 6.0 SQUARE INCHES OF FREE AIR PER FOOT OF LENGTH.

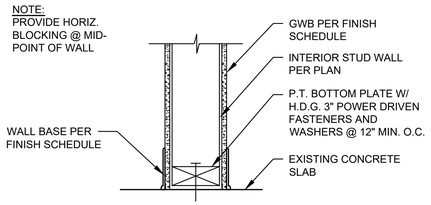
RIDGE DETAIL

5 / A-3 — SCALE: 1-1/2"=1'-0"



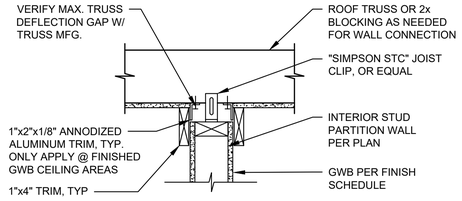
TYP. LAMINATE FACE CASEWORK DETAIL

8 / A-2 — SCALE: 1-1/2"=1'-0"



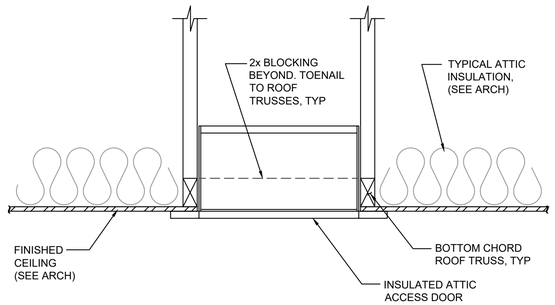
TYPICAL PARTITION WALL SECTION

6 / A-2 — SCALE: 1-1/2"=1'-0"



PARTITION WALL HEAD DETAIL

7 / A-2 — SCALE: 1-1/2"=1'-0"



TYPICAL ATTIC ACCESS DETAIL

TYP / - — NOT TO SCALE

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
ARCHITECTURAL DETAILS

SHEET: A-5
OF: 5

JOB NO.: 20859
DWG: A_OPS_PLN

HVAC DESIGN CRITERIA

OA VENTILATION

SPACES IN THE OPERATIONS BUILDING WHICH ARE CONSIDERED NORMALLY OCCUPIED SHALL BE NATURALLY VENTILATED THROUGH OPENABLE WINDOWS, DOORS, OR LOUVERS, PER IMC. RESTROOMS ARE MECHANICALLY VENTILATED WITH EXHAUST FANS PER IMC. THESE SPACES INCLUDE THE LAB/OFFICE AND THE LOCKER ROOM.

REQ'D OPENABLE AREA RATIO:	4% OF FLOOR AREA
FLOOR AREA:	560 SF
REQ'D MIN. OPENABLE AREA:	22.5 SF

SPACES IN THE OPERATIONS BUILDING WHICH ARE CONSIDERED UNOCCUPIED ARE NOT VENTILATED. THESE SPACES INCLUDE THE ELECTRICAL ROOM AND THE BASEMENT.

THE CHLORINE ROOM IS CONSIDERED UNOCCUPIED BUT WILL BE VENTILATED TO PREVENT THE BUILDUP OF CHLORINE GASSES.

THE SLUDGE PUMP ROOM IS CONSIDERED UNOCCUPIED BUT WILL BE VENTILATED TO PREVENT THE BUILDUP OF EXPLOSIVE GASSES AND TO DECLASSIFY THE SPACE PER NFPA 820.

REQ'D VENTILATION:	6 ACH
FLOOR AREA:	326 SF
CEILING HEIGHT:	10 FT
SPACE VOLUME:	3,260 CU. FT
REQ'D MIN. VENTILATION:	330 CFM

DESIGN TEMPERATURES (WSEC APPENDIX C)

WINTER AMBIENT TEMP:	10 °F
SUMMER AMBIENT TEMP:	89 °F

HEATING/COOLING

LAB/OFFICE:

INTERIOR HEATING SETPOINT:	70 °F
INTERIOR COOLING SETPOINT:	75 °F
REQ'D HEATING LOAD:	19.3 MBH
REQ'D COOLING LOAD:	9.5 MBH
TYPE:	SPLIT HEAT PUMP AND FAN COIL

CHLORINE ROOM:

INTERIOR HEATING SETPOINT:	45 °F
REQ'D HEATING LOAD:	5.4 MBH
TYPE:	ELECTRIC RESISTANCE
DESIGN CAPACITY:	1.6 KW

ELECTRICAL ROOM:

INTERIOR HEATING SETPOINT:	45 °F
INTERIOR COOLING SETPOINT:	95 °F
REQ'D HEATING LOAD:	1.8 MBH
REQ'D COOLING LOAD:	18.4 MBH
TYPE:	SPLIT HEAT PUMP AND FAN COIL

BASEMENT:

INTERIOR HEATING SETPOINT:	45 °F
REQ'D HEATING LOAD:	6.6 MBH
TYPE:	ELECTRIC RESISTANCE
DESIGN CAPACITY:	2.0 KW

SLUDGE PUMP ROOM:

INTERIOR HEATING SETPOINT:	45 °F
REQ'D HEATING LOAD:	16.9 MBH
TYPE:	ELECTRIC RESISTANCE
DESIGN CAPACITY:	5.0 KW

CONTROL DESCRIPTION:

HEAT PUMP [01 HP 01] AND FAN COIL [01 FC 01] PROVIDE HEATING AND COOLING TO THE LAB/OFFICE AND ARE CONTROLLED BY THERMOSTAT [01 T 01].

HEAT PUMP [01 HP 02] AND FAN COIL [01 FC 02] PROVIDED HEATING AND COOLING TO THE ELECTRICAL ROOM AND ARE CONTROLLED BY THERMOSTAT [01 T 02].

CEILING EXHAUST FAN [01 EF 01] PROVIDES MECHANICAL EXHAUST TO THE LOCKER ROOM AND IS CONTROLLED TO PROVIDE 80 CFM WHEN THE ROOM LIGHTS ARE ON.

INLINE EXHAUST FAN [01 EF 02] PROVIDES CONTINUOUS MECHANICAL EXHAUST TO THE CHLORINE GAS ROOM.

SUPPLY FAN [01 SF 01] PROVIDES CONTINUOUS MECHANICAL VENTILATION TO THE SLUDGE PUMP ROOM TO PREVENT THE BUILD UP OF EXPLOSIVE GASSES AND DECLASSIFY THE SPACE.

EXHAUST FAN [01 EF 03] PROVIDES CONTINUOUS MECHANICAL VENTILATION TO THE SLUDGE PUMP ROOM TO PREVENT THE BUILD UP OF EXPLOSIVE GASSES AND DECLASSIFY THE SPACE.

FLOW SWITCHES [01 FS 01] AND [01 FS 02] MONITOR THE AIRFLOW IN THE SLUDGE PUMP ROOM AND SHALL ALARM IF THE AIRFLOW DROPS BELOW THE REQUIRED 330 CFM.

WALL HEATER [01 HT 01] PROVIDES SUPPLEMENTAL HEAT TO THE LOCKER ROOM AND IS CONTROLLED BY AN INTERNAL THERMOSTAT.

UNIT HEATER [01 HT 02] PROVIDES HEATING TO THE CHLORINE GAS ROOM AND IS CONTROLLED BY AN INTERNAL THERMOSTAT.

UNIT HEATERS [01 HT 03] AND [01 HT 04] PROVIDE HEATING TO THE BASEMENT AND ARE EACH CONTROLLED BY INTERNAL THERMOSTATS.

DUCT HEATER [01 HT 05] PROVIDES HEATING TO THE SLUDGE PUMP ROOM AND IS CONTROLLED BY THERMOSTAT [01 T 03].

HVAC SYMBOLS

- RECTANGULAR DUCT (DIMENSION SHOWN X DIMENSION HIDDEN) — #x#
- TRANSITION, CONCENTRIC, 15° MAX
- TRANSITION, ECCENTRIC, 30° MAX
- TRANSITION, SQUARE TO ROUND
- STANDARD RADIUS ELBOW
- SQUARE THROAT ELBOW W/ TURNING VANES
- MANUAL VOLUME DAMPER — VD
- EXHAUST/RETURN/OA DUCT (TOWARD VIEWER)
- EXHAUST/RETURN/OA DUCT (AWAY FROM VIEWER)
- SUPPLY DUCT (TOWARD VIEWER)
- SUPPLY DUCT (AWAY FROM VIEWER)
- FLEXIBLE DUCT CONNECTION (TO AIR HANDLING EQUIPMENT)
- SECTION EXHAUST/RETURN/OA
- SECTION SUPPLY DUCT
- LOUVER
- CEILING DIFFUSER, ROUND NECK
- THERMOSTAT, WALL MOUNTED — T — WALL TYPE VARIES, SEE S-SHEETS FOR WALL TYPE
- FLOW SWITCH — FS
- FLOW DIRECTION, EXHAUST LOUVER OR SUPPLY DIFFUSER/GRILLE
- FLOW DIRECTION, INTAKE LOUVER OR EXHAUST/RETURN GRILLE

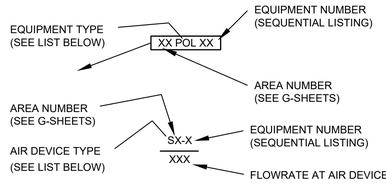
HVAC ABBREVIATIONS

A	AMPERE
ACH	AIR CHANGES PER HOUR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
DIA	DIAMETER
DN	DOWN
EA	EXHAUST AIR
ECM	ELECTRONICALLY COMMUTATED MOTOR
EF	EXHAUST FAN
°F	DEGREES FAHRENHEIT
FS	FLOW SWITCH
MBH	1,000 BTU'S/HR
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MOCP	MAXIMUM OVER CURRENT PROTECTION
N/A	NOT APPLICABLE
OA	OUTSIDE AIR
SA	SUPPLY AIR
SP	STATIC PRESSURE
TEMP	TEMPERATURE
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VD	VOLUME DAMPER
VRF	VARIABLE REFRIGERANT FLOW
W	WATT
WC	WATER COLUMN
WP	WALL PENETRATION

HVAC GENERAL NOTES

1. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE CONTRACT SPECIFICATIONS AND WITH THE PROVISIONS OF THE 2015 INTERNATIONAL MECHANICAL CODE, 2015 INTERNATIONAL BUILDING CODE, 2015 INTERNATIONAL FIRE CODE AS AMENDED BY THE STATE OF WASHINGTON AND THE LOCAL AUTHORITY HAVING JURISDICTION.
2. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET, WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK.
3. CONTRACTOR SHALL VERIFY THE DIMENSIONS WITH THE EQUIPMENT MANUFACTURER TO PROVIDE DUCT TRANSITIONS TO HVAC VENTILATORS, FANS, LOUVERS, OR SUPPLY/EXHAUST GRILLES TO MATCH THE INLET/OUTLET DIMENSIONS OF THE EQUIPMENT.
4. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH SMACNA RESTRAINT MANUAL AS REQUIRED BY 2015 INTERNATIONAL BUILDING CODE REQUIREMENTS.
5. CONSTRUCTION, SUPPORTS AND INSTALLATION SHALL BE INSTALLED AND COMPLY WITH THE 2015 INTERNATIONAL MECHANICAL CODE (IMC) AND WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
6. ALL DUCTWORK IS CLASSIFIED AS LOW PRESSURE.
7. BALANCING: ALL HVAC SYSTEMS SHALL BE BALANCED BY A LICENSED CONTRACTOR IN ACCORDANCE WITH ACCEPTED ENGINEERING STANDARDS AND SPECIFICATION. AN AIR BARRIER TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE AND ASTM E779.
8. LOCATE THERMOSTATS 5 FEET AFF. UNLESS OTHERWISE NOTED.
9. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTWORK CONNECTING TO EQUIPMENT.
10. EQUIPMENT DRAIN PIPING SHALL MAINTAIN A MIN HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF MIN -1/8 INCH VERTICAL PER 1 FOOT HORIZONTAL.
11. CONTRACTOR SHALL COORDINATE CEILING EQUIPMENT LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING LAYOUT.
12. EQUIPMENT CONDENSATE DRAINS SHALL BE TRAPPED AS REQUIRED BY THE EQUIPMENT OR APPLIANCE MANUFACTURER.
13. REFRIGERANT PIPING SHALL BE INSTALLED WITH CLOSED CELL ELASTOMERIC INSULATION IN ACCORDANCE WITH SPECIFICATION 15700. INSULATION EXPOSED TO OUTSIDE CONDITIONS SHALL BE ENCLOSED BY A LINE-HIDE LINESET COVER SYSTEM.
14. BUILDING HVAC DOCUMENTS SUCH AS RECORDS, CALCULATIONS, COMPLIANCE FORMS, AND EQUIPMENT MANUALS SHALL BE SUPPLIED TO THE BUILDING OWNER.

HVAC EQUIPMENT & AIR DEVICE IDENTIFICATIONS

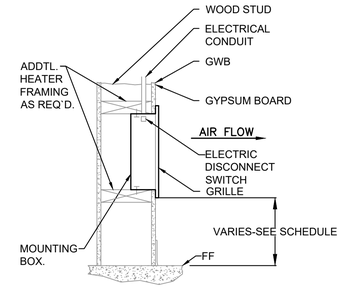


EQUIPMENT

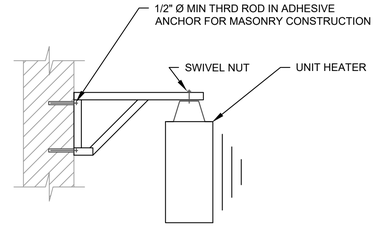
EF	EXHAUST FAN
FC	FAN COIL
FS	FLOW SWITCH
HP	HEAT PUMP
HT	HEATER
MD	MOTORIZED DAMPER
SF	SUPPLY FAN
T	THERMOSTAT

AIR DEVICE

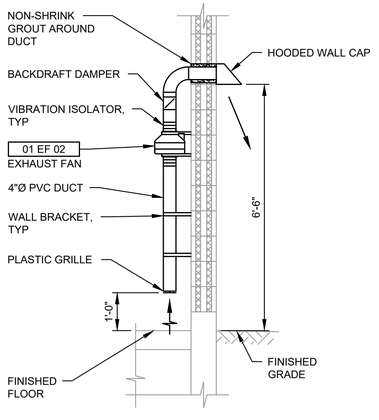
E	EXHAUST GRILLE
LVR	LOUVER
R	RETURN GRILLE
S	SUPPLY DIFFUSER/GRILLE



1 / TYP — **ELEVATION WALL HEATER**
NOT TO SCALE



2 / TYP — **HEATER MOUNTING**
SCALE: 1"=1'-0"



3 / - — **CHLORINE ROOM EXHAUST FAN DETAIL**
SCALE: 1/2"=1'-0"

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
HVAC NOTES

SHEET: H-1
OF: 3

JOB NO.: 20859
DWG: H_OPS_BLDG

FAN SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	POWER, VOLTAGE, AND PHASE	CONTROLS	CFM AND STATIC PRESSURE	REMARKS
OPERATIONS BUILDING	LOCKER ROOM	01 EF 01	CEILING EXHAUST FAN	PANASONIC FV-05 OR EQUAL	120 V 1 Ø	ON W/ LIGHT SWITCH; SEE E-SHEETS	80 CFM @ 0.1" WC	PROVIDE MULTI-SPEED/TIME DELAY PLUG-IN MODULE
	CHLORINE ROOM	01 EF 02	INLINE EXHAUST FAN	FANTECH FR 100 OR EQUAL	22 W 115 V 1 Ø	CONTINUOUS	100 CFM @ 0.2" WC	PROVIDE PLASTIC GRILLE, MOUNTING BRACKETS, VIBRATIONS ISOLATORS, BACKDRAFT DAMPER, DUCTWORK, AND EXTERNAL EXHAUST HOOD.
	SLUDGE PUMP ROOM	01 EF 03	INLINE EXHAUST FAN	GREENHECK CSP-A700-VG OR EQUAL	115 V 1 Ø	CONTINUOUS	400 CFM @ 0.2" WC	PROVIDE ECM, NEMA 4X DISCONNECT, VIBRATION ISOLATORS, AND HI-PRO POLYESTER FINISH.
		01 SF 01	INLINE SUPPLY FAN	GREENHECK CSP-A700-VG OR EQUAL	115 V 1 Ø	CONTINUOUS	350 CFM @ 0.2" WC	PROVIDE ECM, NEMA 4X DISCONNECT, VIBRATION ISOLATORS, AND HI-PRO POLYESTER FINISH.

HEATER SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	KW OUTPUT	CONTROLS	VOLTAGE AND PHASE	MOUTING TYPE	REMARKS
OPERATION BUILDING	LOCKER ROOM	01 HT 01	WALL HEATER	QMARK AWH OR EQUAL	1.5 KW	INTERNAL THERMOSTAT	208 V 1 Ø	RECESSED	PROVIDE INTERNAL THERMOSTAT, THERMAL CUTOUT, AND INTEGRAL DISCONNECT SWITCH.
	CHLORINE ROOM	01 HT 02	UNIT HEATER	BERKO BWD OR EQUAL	3 KW	INTERNAL THERMOSTAT	480 V 3 Ø	WALL BRACKET	CORROSION RESISTANT; PROVIDE INTERNAL THERMOSTAT, PILOT LIGHT, AND INTERNAL DISCONNECT. MOUNT 8'-0" AFF.
	BASEMENT	01 HT 03	UNIT HEATER	QMARK MUH OR EQUAL	3 KW	INTERNAL THERMOSTAT	480 V 3 Ø	WALL BRACKET	PROVIDE INTERNAL THERMOSTAT, PILOT LIGHT, AND INTERNAL DISCONNECT. MOUNT 8'-0" AFF.
		01 HT 04	UNIT HEATER	QMARK MUH OR EQUAL	3 KW	INTERNAL THERMOSTAT	480 V 3 Ø	WALL BRACKET	PROVIDE INTERNAL THERMOSTAT, PILOT LIGHT, AND INTERNAL DISCONNECT. MOUNT 8'-0" AFF.
	SLUDGE PUMP ROOM	01 HT 05	DUCT HEATER	INDEECO QUA OR EQUAL	6 KW	01 T 03	480 V 3 Ø	SLIP-IN	PROVIDE DISCONNECT, DUST TIGHT AND INSULATED TERMINAL BOX, "ON" AND "LOW AIRFLOW" PILOT LIGHTS, AND AIRFLOW SWITCH.

GRILLE/DIFFUSER SCHEDULE

BUILDING	ROOM NAME	DIFFUSER/ GRILLE NO.	TYPE	MANUFACTURER & MODEL NO.	SIZE (WxL)	REMARKS
OPERATION BUILDING	SLUDGE PUMP ROOM	S1-1	SUPPLY GRILLE	PRICE 95 OR EQUAL	8"x12"	PROVIDE DUCT MOUNTING, AND BAKED ENAMEL FINISH.
		S1-2	SUPPLY GRILLE	PRICE 95 OR EQUAL	8"x12"	PROVIDE DUCT MOUNTING, AND BAKED ENAMEL FINISH.
	CHLORINE GAS ROOM	E1-1	EXHAUST GRILLE	TRUAIRE A960 OR EQUAL	14"x14"	PROVIDE DUCT MOUNTING, ACRYLIC EGG CRATE W/ ALUMINUM FRAME.
	SLUDGE PUMP ROOM	E1-2	EXHAUST GRILLE	PRICE 95 OR EQUAL	8"x12"	PROVIDE DUCT MOUNTING, AND BAKED ENAMEL FINISH.

LOUVER SCHEDULE

BUILDING	ROOM NAME	LOUVER NO.	TYPE	MANUFACTURER & MODEL NO.	ROUGH OPENING SIZE (WxH)	MOUNTING HEIGHT	REMARKS
OPERATIONS BUILDING	CHLORINE ROOM	01 LVR 01	INTAKE LOUVER	GREENHECK ESD-635 OR EQUAL	24"x16"	BOTTOM @ 7'-10" AFF	PROVIDE EXTENDED SILL, HYLAR/KYNAR FINISH, BD-300 BACKDRAFT DAMPER W/ HI-PRO FINISH, INSECT SCREEN, AND CLIP ANGLES.
	LOCKER ROOM	01 LVR 02	EXHAUST LOUVER	GREENHECK BVE OR EQUAL	8"x8"	BOTTOM @ 11'-2" AFF	PROVIDE EXTENDED SILL, HYLAR/KYNAR FINISH, INSECT SCREEN, AND CLIP ANGLES.

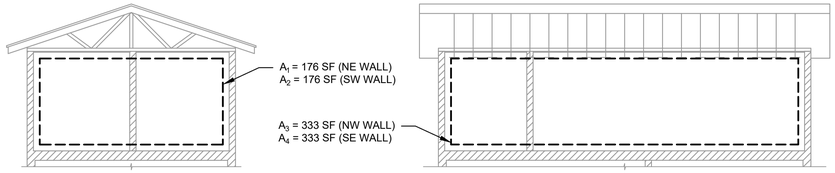
HEAT PUMP SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	MANUFACTURER & MODEL NO.	VOLTAGE, PHASE AND MCA	CONTROLS	STANDARD AIRFLOW	HEATING CAPACITY	COOLING CAPACITY	AHRI LISTED EFFICIENCY	REMARKS
OPERATION BUILDING	LAB/OFFICE	01 HP 01	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A36NKA7 OR EQUAL	208 V 1Ø 25 A	01 FC 01	~3,900 CFM	25.9 MBH @ 17 °F OAT	36 MBH @ 95 °F OAT	18.8 SEER 9.2 HSPF	PROVIDE INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, WIND BAFFLE, AND MITSUBISHI REMOTE ADAPTER WIRING HARNESS (PART #PAC-725AD)
		01 FC 01	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A36KA7 OR EQUAL	208 V 1Ø 2 A	01 T 01	700-920 CFM				PROVIDE CONDENSATE PUMP. LOCATE ABOVE DOOR.
	ELECTRICAL ROOM	01 HP 02	OUTDOOR HEAT PUMP	MITSUBISHI PUZ-A24NHA7 OR EQUAL	208 V 1Ø 25 A	01 FC 02	~3,900 CFM	15.7 MBH @ 17 °F OAT	24 MBH @ 95 °F OAT	21.4 SEER 11.0 HSPF	PROVIDE INSULATED LINE SET, INSULATED DRAIN PIPE, LINE HIDE SET, WIND BAFFLE, AND MITSUBISHI REMOTE ADAPTER WIRING HARNESS (PART #PAC-725AD)
		01 FC 02	WALL MOUNTED FAN COIL	MITSUBISHI PKA-A24KA7 OR EQUAL	208 V 1Ø 2 A	01 T 02	700-920 CFM				PROVIDE CONDENSATE PUMP. LOCATE ABOVE DOOR.

NOTE: HEATING AND COOLING CAPACITIES ARE ASSUMING 70 °F AND 80 °F INDOOR TEMPERATURES RESPECTIVELY, PER THE MANUFACTURER

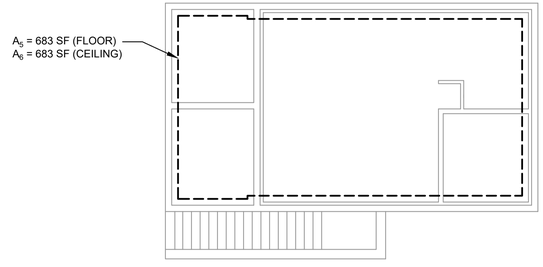
CONTROL SCHEDULE

BUILDING	ROOM NAME	UNIT NO.	TYPE	CONTROLLED EQUIPMENT	MANUFACTURER & MODEL NO.	HEAT SET POINT	COOL SET POINT	VOLTAGE AND PHASE	REMARKS
OPERATION BUILDING	LAB/OFFICE	01 T 01	PROGRAMMABLE THERMOSTAT	01 FC 01	MITSUBISHI PAR-40MAAU OR EQUAL	70 °F	75 °F	12 VDC	
	ELECTRICAL ROOM	01 T 02	PROGRAMMABLE THERMOSTAT	01 FC 02	MITSUBISHI PAR-40MAAU OR EQUAL	45 °F	95 °F	12 VDC	
	SLUDGE PUMP ROOM	01 T 03	THERMOSTAT	01 HT 05	PECO T167 OR EQUAL	45 °F	N/A	0-10 VDC	PROPORTIONAL CONTROL FOR DUCT HEATER.
		01 FS 01	FLOW SWITCH	N/A	KOBOLD LPS OR EQUAL	N/A	N/A	120 V 1 Ø	MOUNT INSIDE SUPPLY DUCT.
		01 FS 02	FLOW SWITCH	N/A	KOBOLD LPS OR EQUAL	N/A	N/A	120 V 1 Ø	MOUNT INSIDE EXHAUST DUCT.



SECTION - WALL AREA A1/A2

SECTION - WALL AREA A3/A4



TOTAL AIR BARRIER AREA

$A_{TOT} = A_1 + A_2 + A_3 + A_4 + A_5 + A_6$

$A_{TOT} = (176 + 176 + 333 + 333 + 683 + 683)$ SF

$A_{TOT} = 2384$ SF

PLAN - FLOOR/CEILING AREA A5/A6

AIR BARRIER AREA CALCULATIONS

1/8" = 1'-0"

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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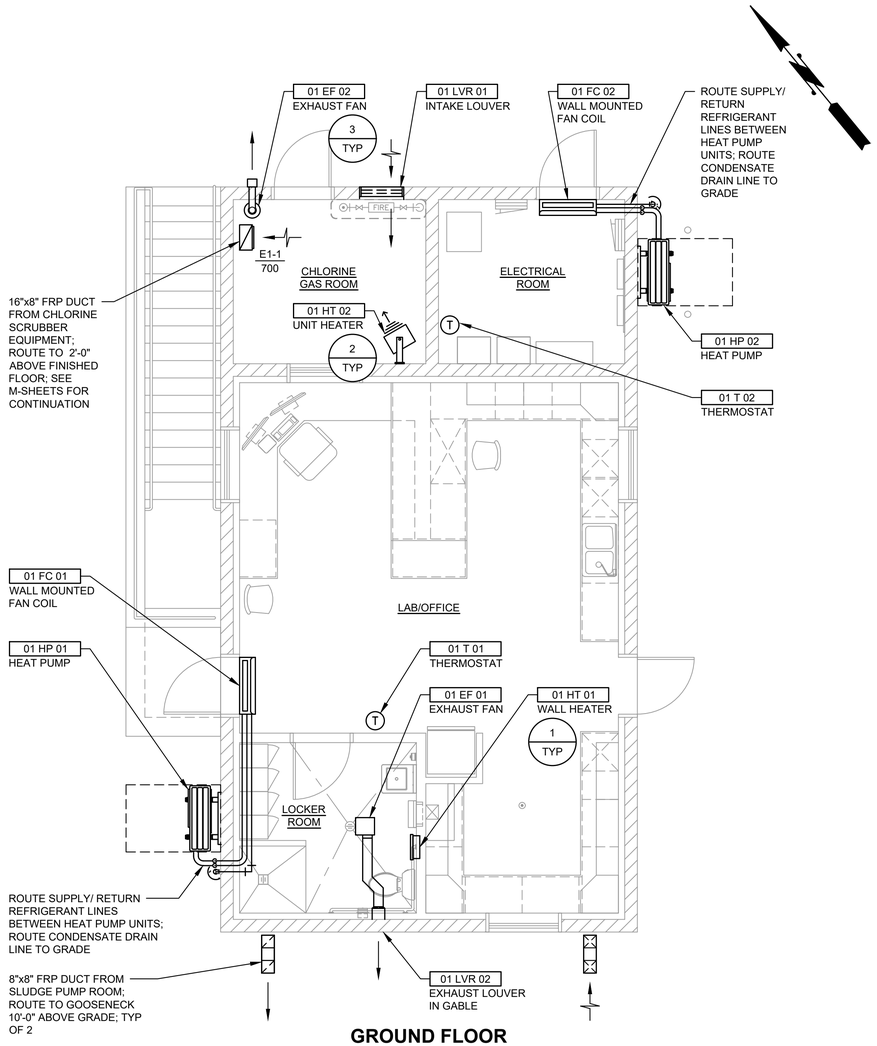
CITY OF BRIDGEPORT
WASHINGTON
DOUGLAS COUNTY
EMERGENCY FIRE RESPONSE SERVICES
HVAC EQUIPMENT SCHEDULES

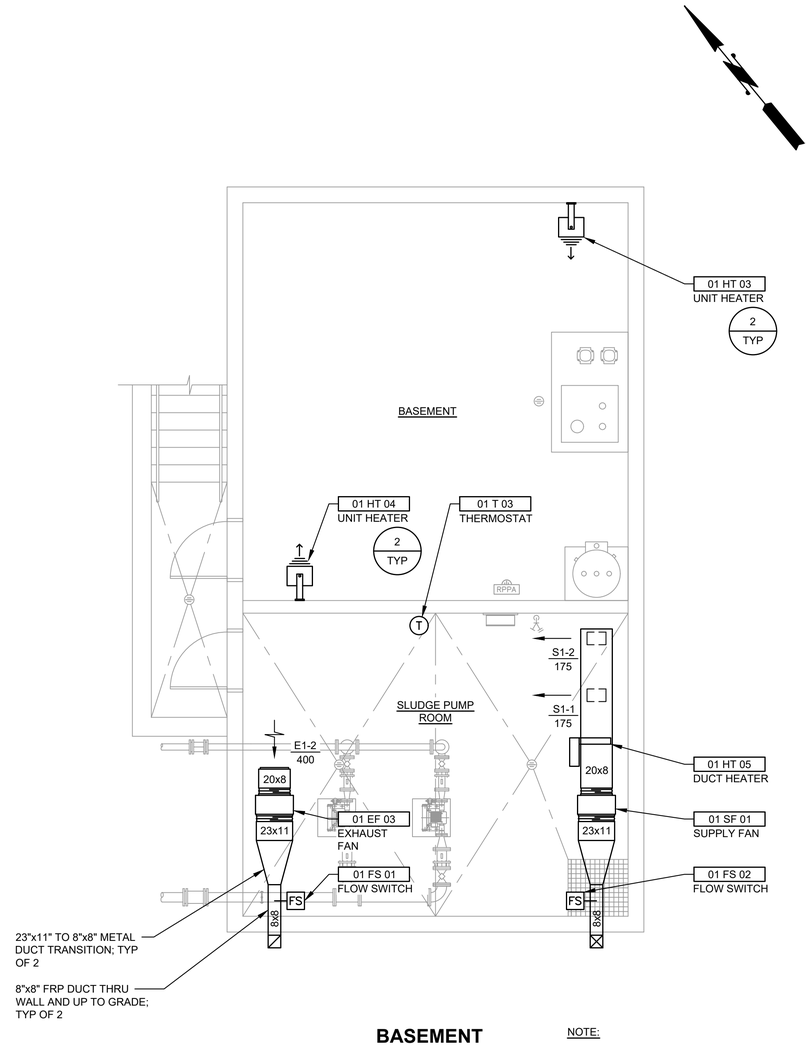
SHEET: H-2
OF: 3

JOB NO.: 20859
DWG: H_OPS_BLDG



GROUND FLOOR HVAC PLAN

SCALE: 1/4"=1'-0"



BASEMENT HVAC PLAN

SCALE: 1/4"=1'-0"

NOTE:

1. COORDINATE INSTALLATION HEIGHT OF EXHAUST FAN [01 EF 03] W/ DRAIN PLUMBING ABOVE. BOTTOM OF EQUIPMENT SHALL BE A MIN. OF 7'-0" ABOVE FINISHED FLOOR.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
HVAC PLAN

SHEET: H-3
OF: 3

JOB NO.: 20859
DWG: H_OPS_BLDG

WATER PIPING NOTES

1. ALL PLUMBING WORK SHALL CONFORM WITH THE SPECIFICATIONS AND WITH THE CURRENT EDITION PLUMBING CODE OR SHALL BE APPROVED BY THE LOCAL BUILDING OFFICIAL.
2. PIPING IS SHOWN SCHEMATICALLY HEREIN; ACTUAL ROUTING SHALL BE BY CONTRACTOR IN FIELD.
3. INSTALL EXPOSED SHUT OFF VALVE TO ISOLATE ALL PLUMBING FIXTURES.
4. PROVIDE WATER HAMMER ARRESTORS (MINIMUM 12" AIR CHAMBER) AT ALL SINKS AND ALL INSTANT SHUT-OFF VALVES.
5. USE WALL AND CEILING FLANGES AT ALL PENETRATIONS.
6. ALL EXPOSED NON-POTABLE AND PROCESS WATER PIPING INCLUDING HOSE BIBS, SHALL BE LABELED EVERY 3 TO 5 FEET - "DANGER-UNSAFE WATER".

DRAINAGE PIPING NOTES

1. ALL PLUMBING WORK SHALL CONFORM WITH THE SPECIFICATIONS AND WITH THE CURRENT EDITION PLUMBING CODE OR SHALL BE APPROVED BY THE LOCAL BUILDING OFFICIAL.
2. PIPING IS SHOWN SCHEMATICALLY HEREIN; ACTUAL ROUTING SHALL BE BY CONTRACTOR IN FIELD.
3. ALL BURIED DRAINS SERVING FLOOR DRAINS AND OTHER PLUMBING FIXTURES UNDER SLAB SHALL BE CAST IRON SOIL PIPE. MINIMUM SLOPE AT 1/4"/FT. FOR PIPES < 3", AND AT 1/8"/FT. FOR PIPES ≥ 3".
4. ALL BENDS UNDER FLOOR TO BE 45° FITTINGS MAXIMUM.

PLUMBING SYMBOLS & ABBREVIATIONS

- SHUT OFF VALVE
- UTILITY STATION
- TEE UP
- TEE DOWN
- 90° BEND UP
- 90° BEND DOWN AND UP

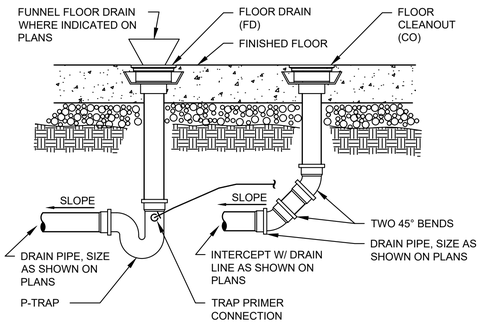
DRAINAGE PIPING LEGEND

———	V	VENT
- - - - - -	CI	SEWER PIPE OR DRAIN PIPE
- - - - - -○	CO	FLOOR CLEAN OUT (CO)
- - - - - -⊜	FD	FLOOR DRAIN (FD) FUNNEL FLOOR DRAIN (FFD)
———○	VSTR	VENT STACK THRU ROOF WITH WALL CLEANOUT

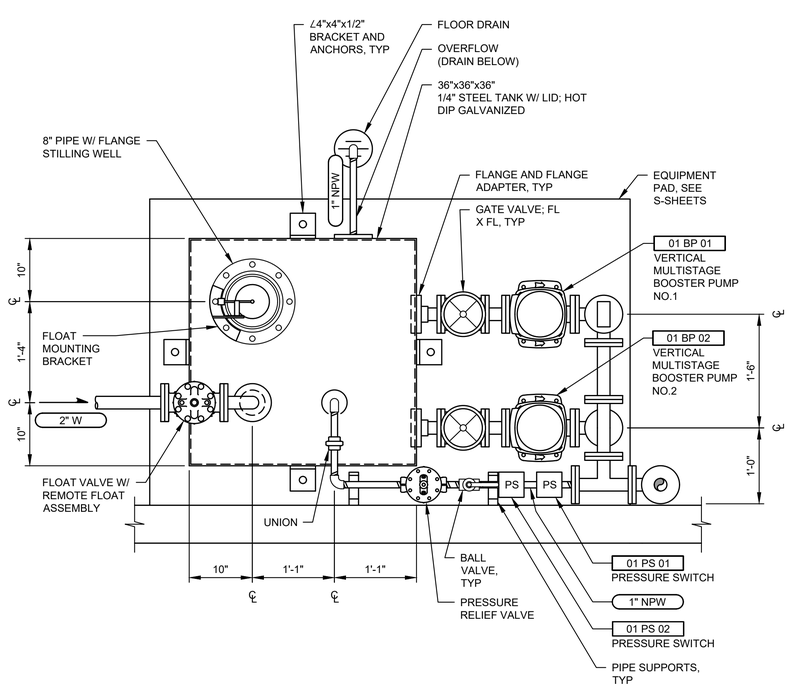
NOTE: FOR ADDITIONAL ABBREVIATIONS & SYMBOLS SEE CORRESPONDING ELECTRICAL, STRUCTURAL, ARCHITECTURAL, & MECHANICAL SHEETS.

DOMESTIC WATER HEATER SCHEDULE

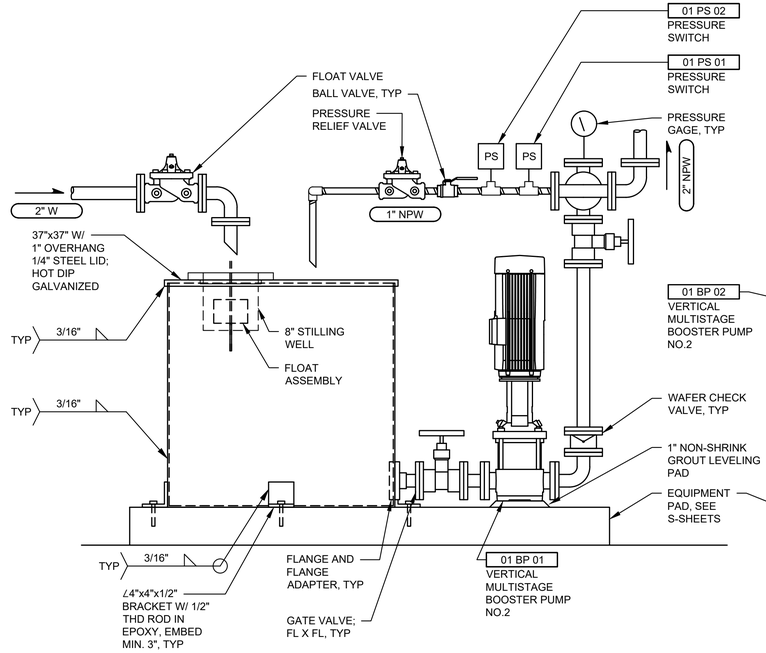
BUILDING	LOCATION	TYPE	MFR & MODEL NO.	ELECTRICAL			MOUNTING	CAPACITY	REMARKS
				KW	VOLTS	PHASE			
LAB BUILDING	BASEMENT	TANK	A.O. SMITH DRE-120 OR EQUAL	9	480	3	FLOOR	119 GAL	PROVIDE SEISMIC WALL STRAPS, INSULATED BASE, 8 GAL EXPANSION TANK, AND T&P RELIEF VALVE



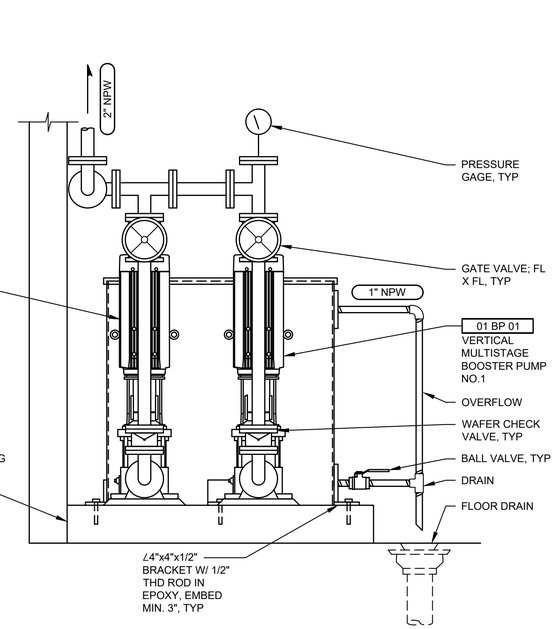
1 / TYP — **FLOOR DRAIN AND CLEANOUT DETAIL**
NOT TO SCALE



PLAN



EAST SECTION



NORTH SECTION

DESIGN CRITERIA	
USE	FLOWRATE (GPM)
SPRAY BARS	15
IMMERSION RING	10
RAS DISINFECTION	25
TOTAL DEMAND	50

2 / P-2 — **AIR GAP SYSTEM**
SCALE: 1"=1'-0"

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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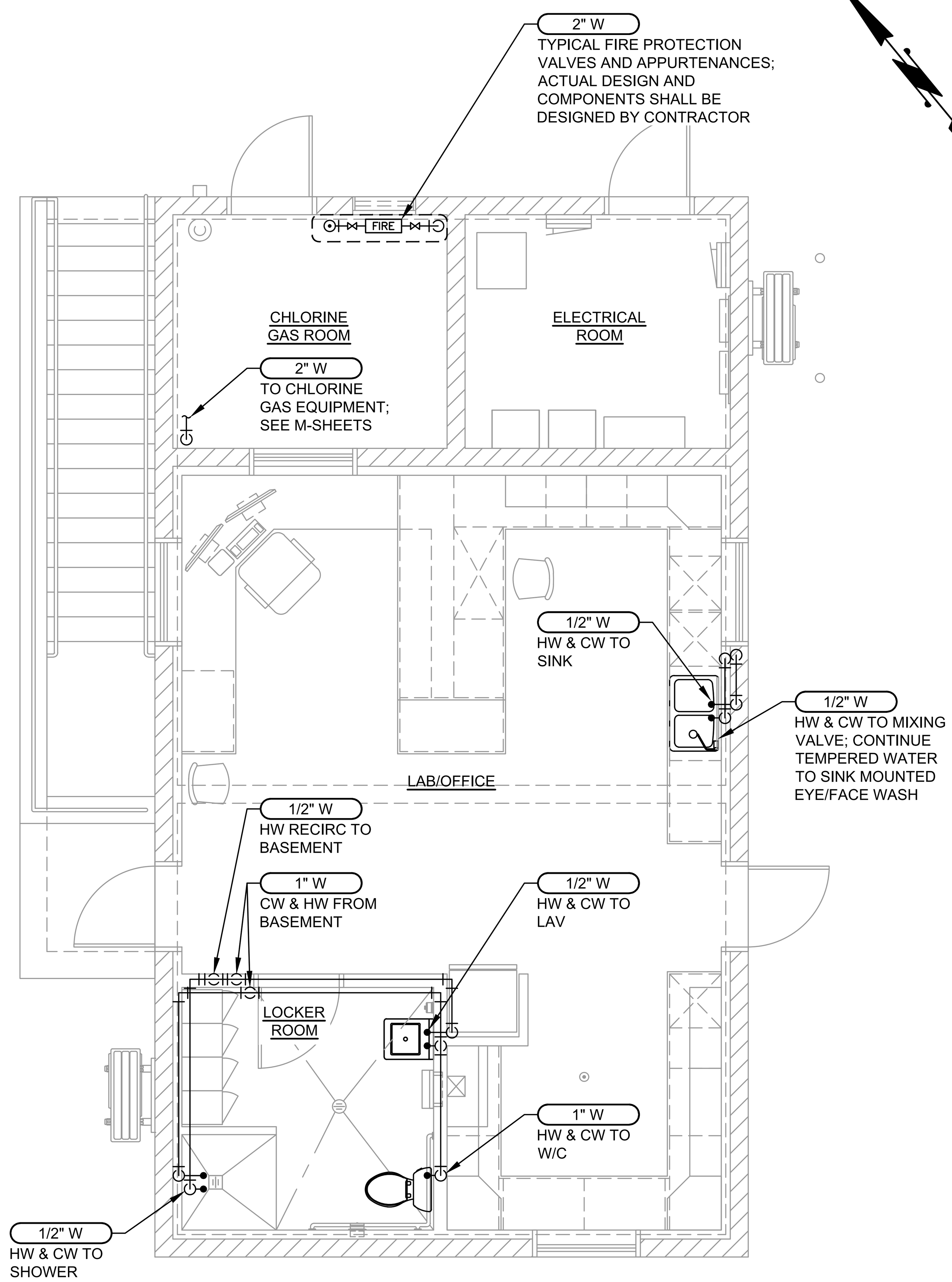
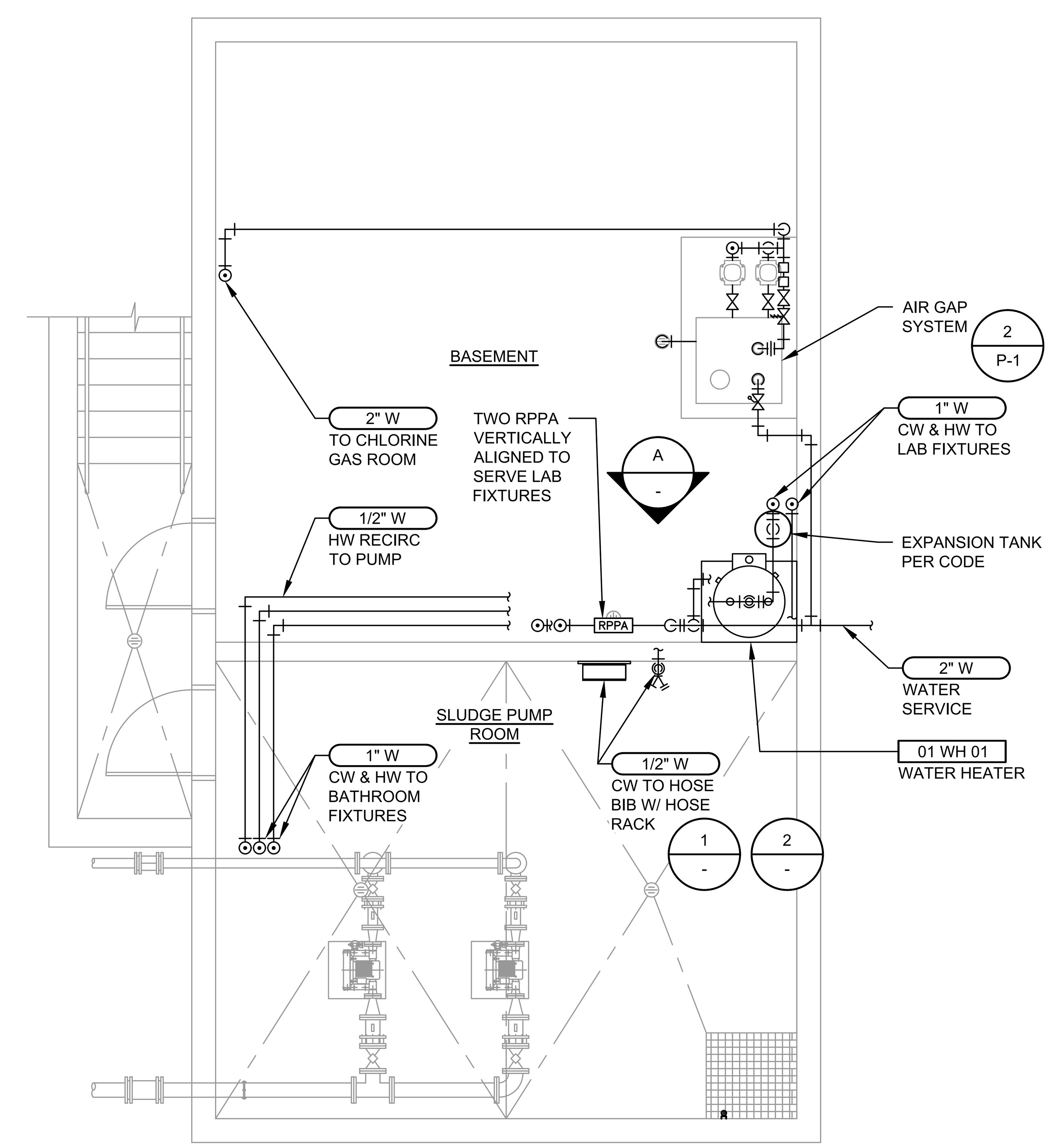
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
PLUMBING NOTES AND DETAILS

SHEET: P-1
OF: 3
JOB NO.: 20859
DWG: P_OPS_BLDG



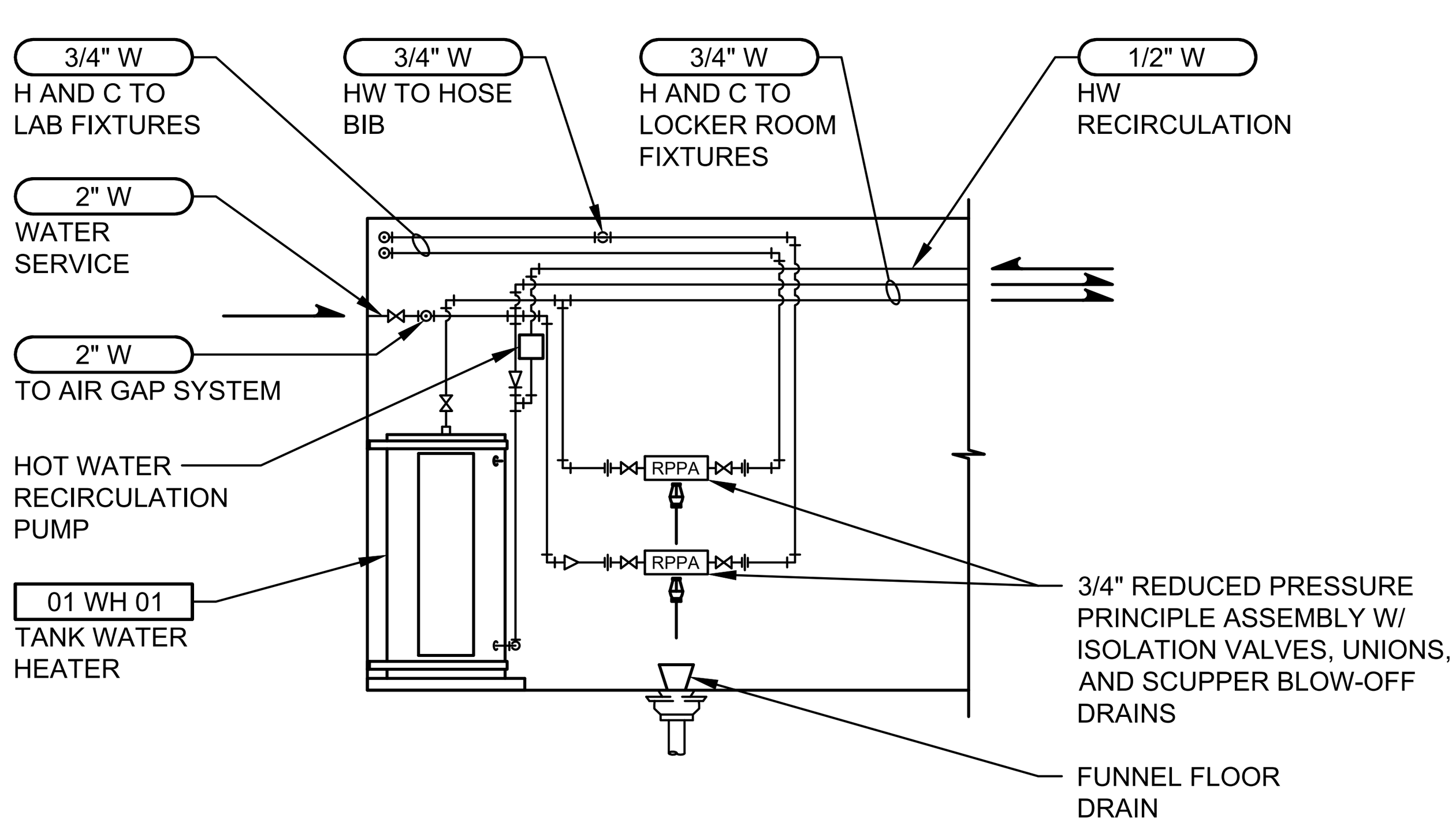
GROUND FLOOR PLUMBING PLAN

SCALE: 1/4"=1'-0"



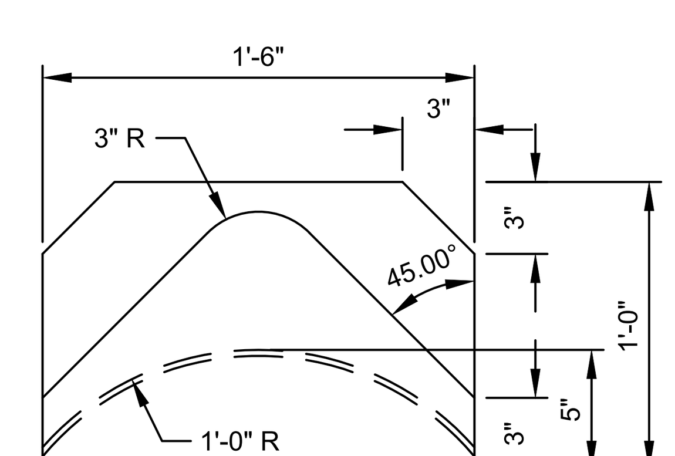
BASEMENT PLUMBING PLAN

SCALE: 1/4"=1'-0"

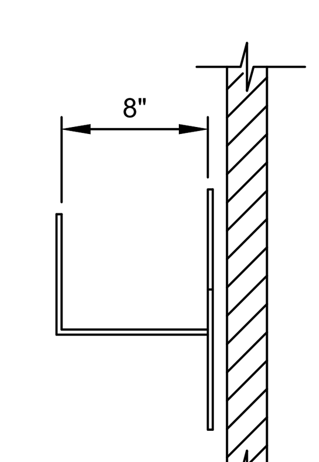


A
-
PLUMBING ELEVATION

SCALE: 1/4"=1'-0"



ELEVATION



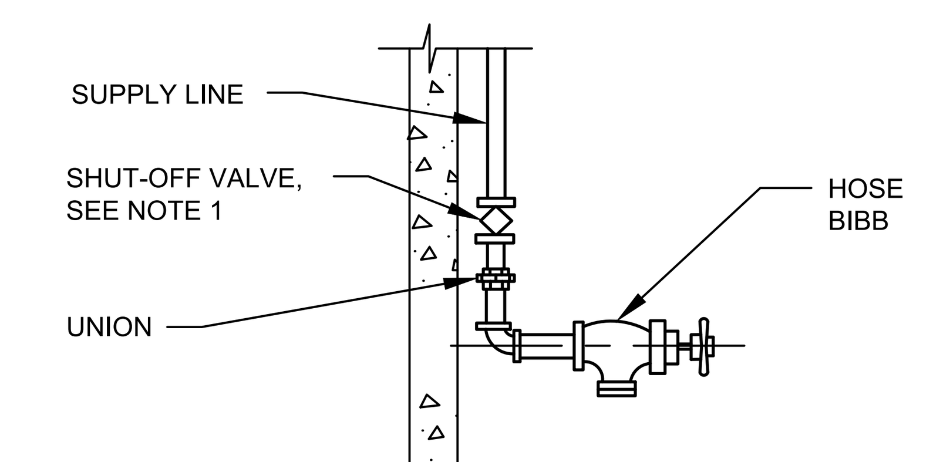
SECTION

NOTES:

1. TO BE LOCATED AT ALL WALL AND YARD HYDRANTS, HOSE BIBS, AND INDOOR UTILITY STATIONS.
2. FABRICATE RACK OF 1/4" STEEL PLATE, HOT DIPPED GALVANIZED.
3. ATTACH TO CONC OR CMU WALLS USING 316 S.S. EXPANSION OR ADHESIVE ANCHORS, ATTACH TO HANDRAILS USING 316 S.S. U-BOLTS, PROVIDE CONCRETE ANCHORED POST AT FREE-STANDING LOCATIONS.

1
-
HOSE RACK DETAIL

SCALE: NTS



NOTES:

1. ALL HOSE BIBBS TO BE CONTROLLED BY INDIVIDUAL SHUT-OFF VALVES (BALL OR PLUG VALVES), EXCEPT WHERE INDIVIDUALLY CONTROLLED BRANCH MAIN SERVES HOSE BIBBS ONLY.
2. FOR SIZE AND LOCATION SEE DRAWINGS.
3. PROVIDE WARNING SIGN. WHEN USED FOR NON-POTABLE WATER.
4. MOUNT HOSE BIB @ 5'-0" AFF.

2
-
HOSE BIB DETAIL

SCALE: NTS

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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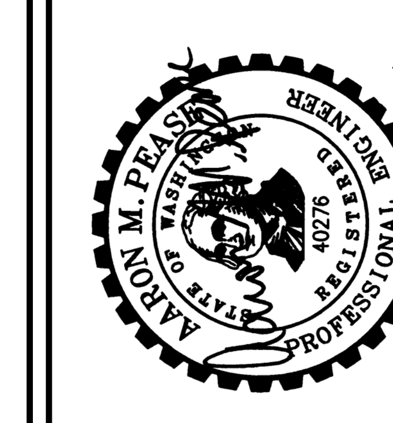
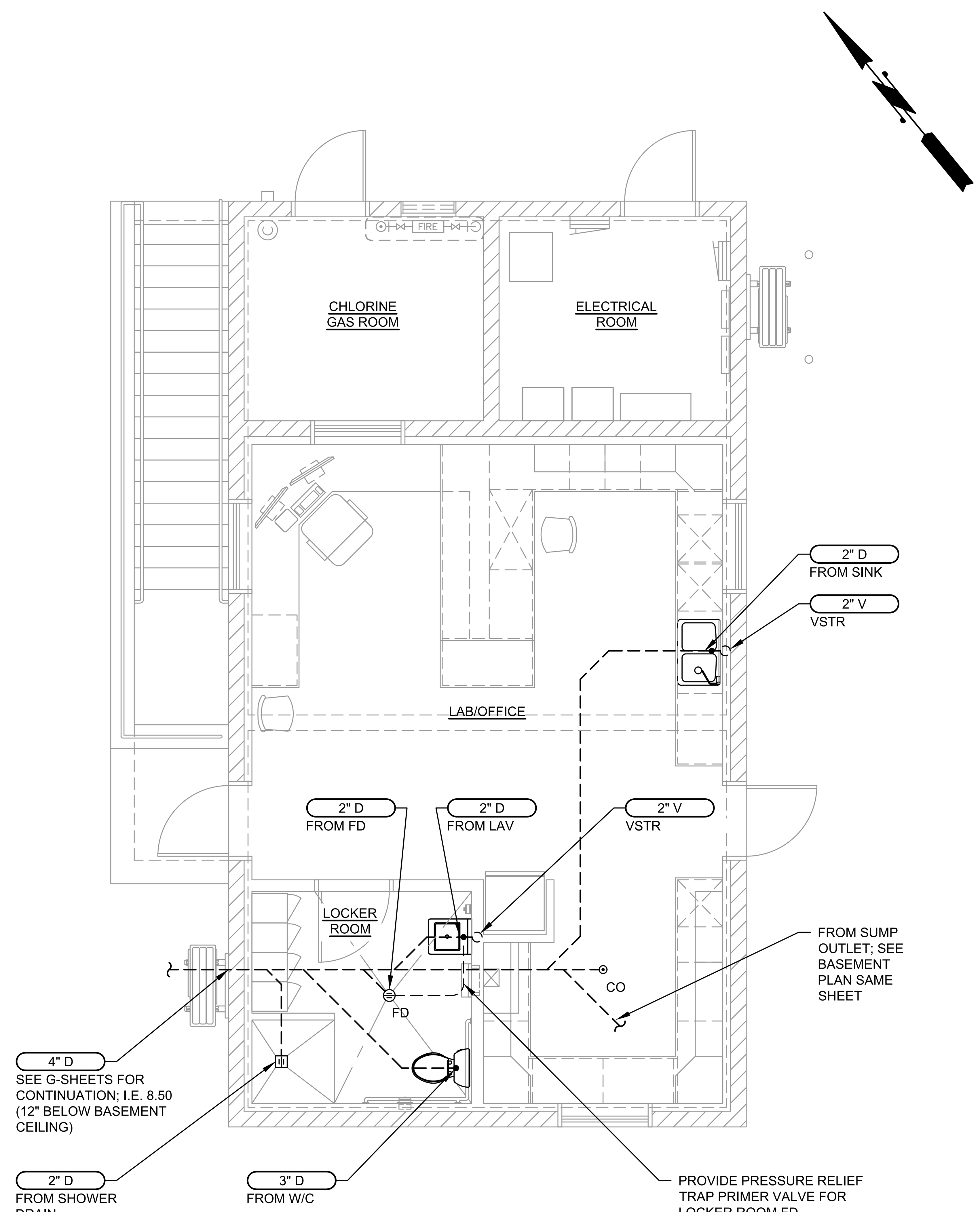


CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
PLUMBING PLAN

SHEET: P-2
OF: 3

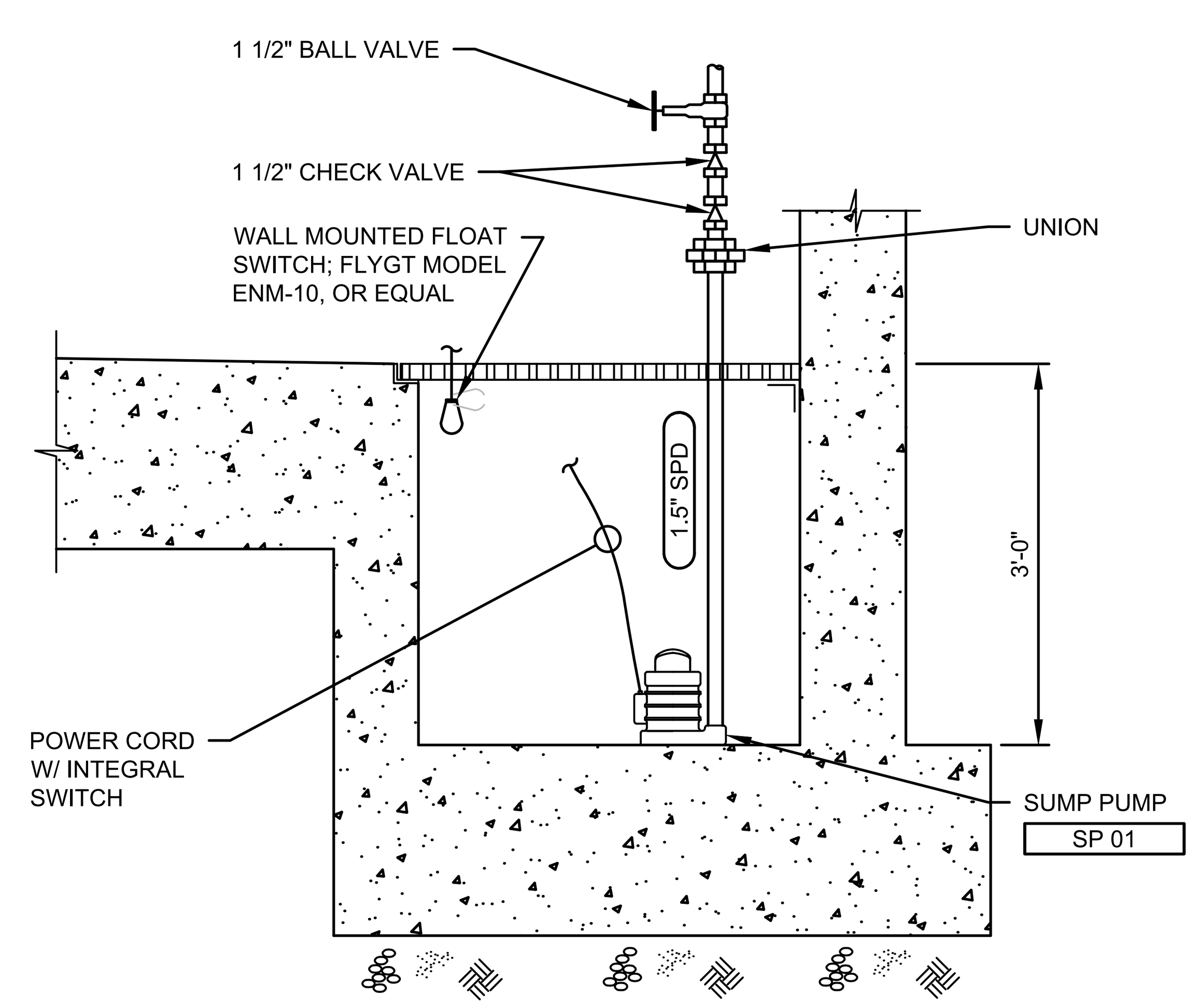
JOB NO.: 20859
DWG: P_OPS_BLDG

I:\bridgeport\20859 - emergency fire response services\Planset\Plumbing\P_OPS_BLDG.dwg, 10/12/2021 2:00 PM, PAYTON PARKER



GROUND FLOOR DRAINAGE PLAN

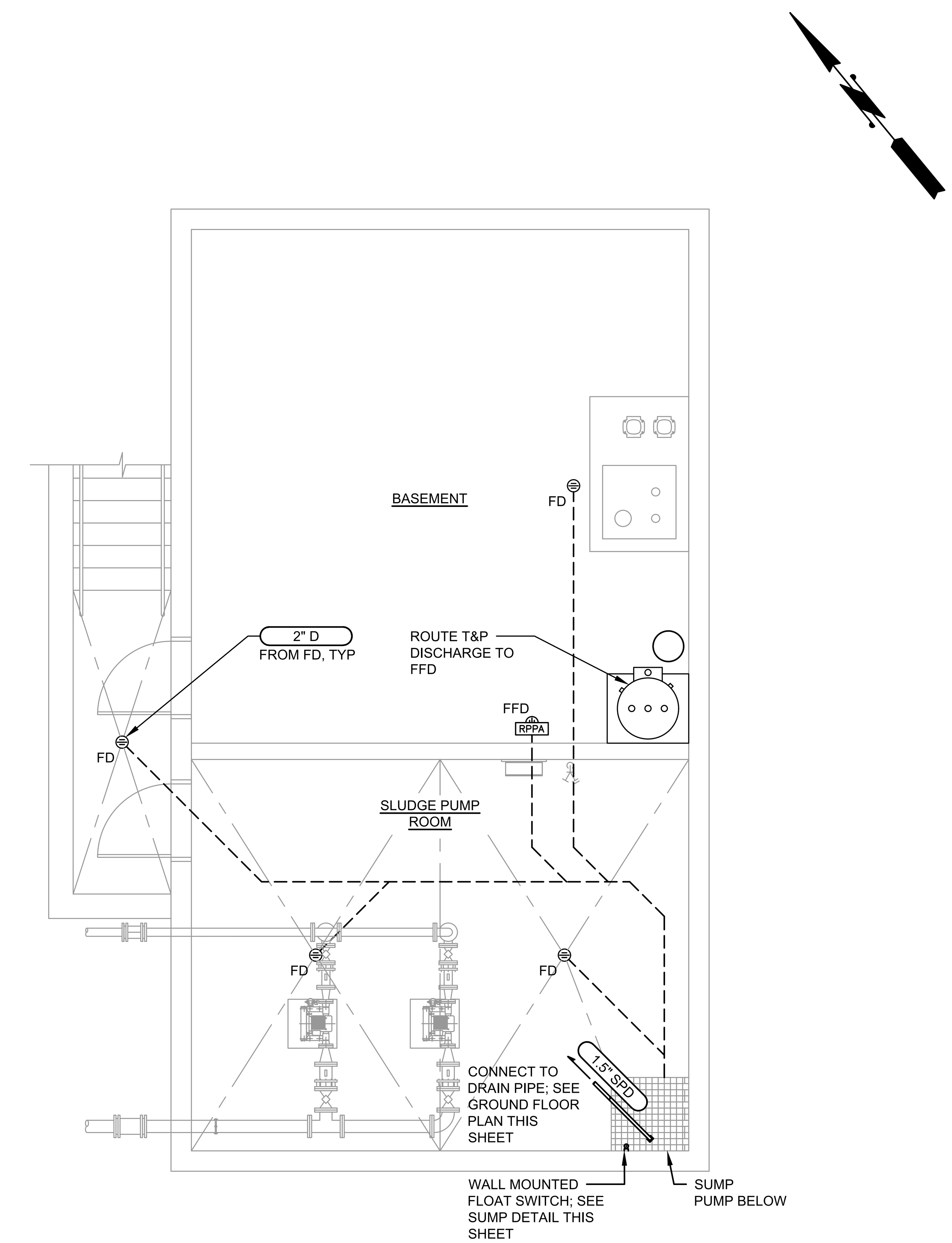
SCALE: 1/4"=1'-0"



A / -

SUMP PUMP DETAIL

SCALE: 3/4"=1'-0"



BASEMENT DRAINAGE PLAN

SCALE: 1/4"=1'-0"

NOTE:

1. OMIT P-TRAPS FROM DRAIN FIXTURES WHICH ARE CONNECTED TO THE SLUDGE PUMP ROOM SUMP.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

DATE:	OCT 2021
DRAWN:	ASD
CHECKED:	AMP
APPROVED:	AMP

No.	REVISION	DATE	APPD

AARON M. PEASE, STATE OF WASHINGTON, 40276, REGISTERED PROFESSIONAL ENGINEER, 10/12/2021

CITY OF BRIDGEPORT

DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

DRAINAGE PLAN

SHEET: P-3

OF: 3

JOB NO.: 20859

DWG: P_OPS_BLDG

GENERAL STRUCTURAL NOTES

GENERAL

THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY. USE DETAIL MARKED "TYPICAL" WHEREVER APPLICABLE. CHANGES, OMISSIONS OR SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER. REFER TO THE SPECIFICATIONS FOR FURTHER REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE.

THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER OF RECORD. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO ITS COMPLETION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE COMPLETION OF THE STRUCTURE.

THE GENERAL NOTES APPLY TO ALL STRUCTURES UNLESS NOTED OTHERWISE (U.N.O.). LOCATION AND SIZE OF ANCHOR BOLTS FOR SPECIFIC EQUIPMENT SHALL BE SPECIFIED BY THE VENDOR. CONTRACTOR SHALL COORDINATE LOCATIONS OF STRUCTURAL OPENINGS, PENETRATIONS AND EMBEDDED ITEMS WITH THE MECHANICAL, ARCHITECTURAL, ELECTRICAL, PLUMBING AND VENTILATION SECTIONS OF THE DRAWINGS AND WITH SUPPLIERS AND SUBCONTRACTORS AS MAY BE REQUIRED.

SPECIAL INSPECTION & TESTING

SPECIAL INSPECTIONS SHALL MEET THE REQUIREMENTS OF IBC CHAPTER 17.
OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS.

FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF NOT CORRECTED, TO THE BUILDING OFFICIAL AND ENGINEER. SUBMIT A FINAL REPORT STATING THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF IBC.

SPECIAL INSPECTION REQUIRED:
CONCRETE: IN ACCORDANCE WITH SECTION 1705.3 AND TABLE 1705.3
MASONRY: IN ACCORDANCE WITH SECTION 1705.4
WOOD: IN ACCORDANCE WITH SECTION 1705.5
SOIL: IN ACCORDANCE WITH SECTION 1705.6 AND TABLE 1705.6

SHOP DRAWINGS

SHOP DRAWINGS, WHERE REQUIRED, SHALL BE CHECKED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING FOR ENGINEER REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW OF DESIGN INTENT, PRIOR TO FABRICATION. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND COORDINATION OF DIMENSIONS AND DETAILS FOR EACH SUBCONTRACTOR.

DESIGN LOADS

ROOF SNOW LOAD:	
DESIGN SNOW LOAD,Ps	30 PSF
GROUND SNOW LOAD,Pg	36 PSF
ROOF LIVE LOAD:, Lr	20 PSF
FLOOR LIVE LOAD:, Lf	125 PSF
WIND DESIGN DATA:	
ULTIMATE WIND SPEED (3-SECOND GUST), Vult	107 MPH
NOMINAL WIND SPEED, Vasd	82.9 MPH
RISK CATEGORY	III
WIND EXPOSURE	B
EARTHQUAKE DESIGN DATA	
MAPPED SPECTRAL RESPONSE ACCELERATIONS	
S_s	0.442 g
S_1	0.168 g
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENT	
S_{ds}	0.426 g
S_{d1}	0.254 g
RISK CATEGORY	III
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC-FORCE-RESISTING SYSTEM(S)	SPECIAL REINFORCED MASONRY SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT(S), Cs	0.107
RESPONSE MODIFICATION FACTOR(S), R	5
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE ANALYSIS

FOUNDATION DATA PER GEOTECHNICAL REPORT BY PanGEO, INC., DATED APRIL 12, 2012.

ALLOWABLE BEARING PRESSURE:..2000 PSF

ABOVE ARE ASSUMED PER DATA PROVIDED,
CONTRACTOR MUST VERIFY IN FIELD.

EXTEND ALL EXTERIOR FOOTINGS 2'-0" MINIMUM BELOW FINISHED GRADE. UNO (UNLESS NOTED OTHERWISE), BOTTOM OF ALL FOOTINGS TO BEAR DIRECTLY ON 2 FEET OF REWORKED EXISTING FILL COMPACTED TO THE REQUIREMENTS OF STRUCTURAL FILL OR ON MEDIUM DENSE ALLUVIAL SOILS. NO FOOTING SHALL BEAR HIGHER THAN 1 VERTICAL TO 1.5 HORIZONTAL SLOPE ABOVE ANY EXCAVATION, EXISTING OR PLANNED. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING TO PREVENT MOVEMENT OF WALLS IF BACKFILL IS PLACED BEFORE FLOOR SYSTEM IS IN PLACE. THERE SHALL BE 95% COMPACTION (ASTM D1557 MODIFIED PROCTOR DENSITY) OF ALL BACKFILL SOIL UNDER SLABS ON GRADE.

THE ON-SITE SOILS MAYBE CONSIDERED FOR WALL BACKFILL PROVIDED THAT THE MATERIAL CAN BE COMPACTED TO THE REQUIREMENTS OF STRUCTURAL FILL AND A RIGID 4-INCH DIAMETER PERFORATED DRAINPIPE BEHIND AND AT THE BASE OF THE WALL FOOTINGS IS PROVIDED. THE DRAINPIPE SHALL BE EMBEDDED IN 12 TO 18 INCHES OF PEA GRAVEL. A MINIMUM OF 12-INCH WIDE LAYER OF FREE DRAINING GRANULAR SOILS (i.e. PEA GRAVEL OR WASHED ROCK) SHALL BE PLACED ADJACENT TO THE WALL FOR THE FULL HEIGHT OF THE WALL, ALTERNATIVELY, A COMPOSITE DRAINAGE MATERIAL, SUCH AS MIRADRAIN 6000 MAY BE USED IN LIEU OF FREE DRAINING GRANULAR SOILS. THE COMPOSITE DRAINAGE MATERIAL SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THE DRAINPIPE AT THE BASE OF THE WALL SHALL BE GRADED TO DIRECT WATER TO A SUITABLE OUTLET.

IF IMPORTED BACKFILL IS NEEDED BELOW THE GROUNDWATER TABLE, GRAVEL BORROW, PERMEABLE BALLAST OR APPROVED EQUIVALENT SHALL BE USED.

WALL BACKFILL SHOULD BE MOISTURE CONDITIONED TO WITHIN ABOUT 3 PERCENT OF OPTIMUM MOISTURE CONTENT, PLACE IN LOOSE HORIZONTAL LIFTS LESS THAN 8 INCHES IN THICKNESS, AND SYSTEMATICALLY COMPACTED TO A DENSE AND RELATIVELY UNYIELDING CONDITION AND TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY, AS DETERMINED USING TEST METHOD ASTM D 1557 (MODIFIED PROCTOR). SMALL HAND OPERATED COMPACTION EQUIPMENT SHOULD BE USED WITHIN 5 FEET OF WALLS TO PREVENT OVERSTRESSING THE WALLS.

MASONRY

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY: f'm=1500 PSI.
CONCRETE MASONRY UNITS: ASTM C90, GRADE N-TYPE I, MEDIUM WEIGHT RUNNING BOND.
MORTAR: ASTM C270, TYPE S, MIN. COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. GROUT: ASTM C476 WITH A MIN. COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS. FILL ALL CELLS CONTAINING REINFORCING WITH GROUT IN LIFTS NOT EXCEEDING 4'-0" IN HEIGHT. FILL OTHER CELLS WITH GROUT AS INDICATED ON DRAWINGS. ALL REINFORCEMENT SHALL BE IN PLACE PRIOR TO GROUTING WITH VERTICAL BARS HELD AT TOP, BOTTOM AND 192 DIAMETERS MAXIMUM ON CENTERS. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR MASONRY WALLS, AS REQUIRED, UNTIL CONNECTIONS TO FLOOR AND/OR ROOF DIAPHRAGMS ARE COMPLETED.

CAST-IN-PLACE CONCRETE

CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:
28-DAY STRENGTH f'c=4,000 PSI
AIR ENTRAINMENT: 5%-7%
MAXIMUM SLUMP: 3" FOR SLABS FOOTINGS, 4" FOR WALLS, COLUMNS AND BEAMS. CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 318.

SUBMIT MIX DESIGN FOR REVIEW AND PROVIDE NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD FOR ALL CONCRETE WITH MAXIMUM W/C=0.45.

REINFORCING STEEL

WELDED WIRE FABRIC (W.W.F.): ASTM A82 AND A185
DEFORMED BARS: ASTM A615, GRADE 60 (GRADE 40 FOR #3).
UNLESS OTHERWISE NOTED ON THESE DRAWINGS, MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:
- CONCRETE CAST AGAINST SOIL=3".
- FORMED CONCRETE AGAINST SOIL=2".
- WALLS, COLUMNS AND BEAMS EXPOSED TO WATER, SEWAGE & WEATHER=2".
- WALLS, COLUMNS AND BEAMS DRY CONDITION=1 1/2".

PROVIDE 2-#5 MIN. U.N.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLAB EXTENDING 2'-6" PAST CORNERS, TYP. AT TIME OF CONCRETE PLACEMENT, REINFORCING SHALL BE FREE OF MUD, OIL, OR OTHER NONMETALLIC COATINGS THAT MAY DECREASE BOND.

WELDING OF REINFORCING BARS SHALL CONFORM TO ANSI/AWS D1.4.
WHERE PERMITTED, LOW HYDROGEN WELDING RODS SHALL BE USED FOR ALL WELDING OF REINFORCING BARS. SPECIAL INSPECTION IS REQUIRED FOR ALL FIELD WELDING.

SUBMIT SHOP DRAWINGS OF REINFORCING STEEL FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 AND 318 (LATEST EDITION).

STRUCTURAL STEEL AND MISCELLANEOUS METALS

"W" SHAPES: ASTM A992, FY=50 KSI.
"HP" SHAPES: ASTM A572, FY=50, KSI.
CHANNELS, ANGLES, PLATES, AND BARS: ASTM A36, FY=36 KSI.
PIPE: ASTM A53 OR A501, FY=35 KSI MINIMUM.
TUBING: ASTM A500, GRADE B, FY=46 KSI.

ALL BOLTS FOR CONNECTIONS IN SUBMERGED CONDITION SHALL BE: ASTM F593C OR F593D STAINLESS STEEL (SS) BOLTS. ALL OTHERS SHALL BE GALVANIZED ASTM A325-N BOLTS HIGH STRENGTH BOLTS (H.S.B.), U.N.O. AS ASTM A307 MACHINE BOLTS (M.B.). WHERE HIGH STRENGTH BOLTS ARE USED, THEY SHALL BE INSTALLED WITH LOAD INDICATOR DEVICES (LOAD INDICATOR WASHERS OR SNAP-OFF HEADS).
ADHESIVE ANCHORS: HILTI HIT-RE 500 V3 OR APPROVED EQUAL, U.N.O. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

HEADED ANCHOR STUDS (H.A.S.): ASTM A108, FY=50 KSI, END WELDED PER MANUFACTURER'S RECOMMENDATIONS.
ALL ANCHOR BOLTS AND THREADED RODS: ASTM F1554, U.N.O. ALL ANCHOR BOLTS MUST BE ACCURATELY PLACED IN THEIR FINAL LOCATION PRIOR TO POURING CONCRETE, "WET STICKING" OF ANCHOR BOLTS IS NOT ALLOWED.

WELDING ELECTRODES OR WIRES: AWS A5.1 OR A5.5, E70XX; AWS A5.17, E70S-X; AWS A5.20, E7XT-X.
FOR ALL SHOP WELDS AND FIELD WELDS OF ALL LATERAL RESISTING ELEMENTS, ELECTRODES SHALL BE E7O WITH A MINIMUM SPECIFIED CVN OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT. ALL WELDS SHALL BE 3/16" MINIMUM U.N.O.

ERECTION AND FABRICATION IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS." WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE - STEEL". ALL WELDING SHALL BE PERFORMED BY AWS/WABO CERTIFIED WELDERS.

ALL COLUMNS AND BEAMS TO BE FROM UNSPLICED LENGTHS U.N.O. ON THE DRAWINGS. SUBMIT SHOP DRAWINGS SHOWING SIZES, DIMENSIONS AND REQUIRED CONNECTION DETAILS FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.

WOOD

ROOF SHEATHING SHALL BE 5/8" (NOMINAL) MIN. U.N.O. APA RATED SHEATHING 24/0, EXPOSURE 1, SIZED FOR SPACING. INSTALL PANELS WITH 1/4" SPACING AT END JOINTS AND 1/8" SPACING AT EDGE JOINTS MIN. INSTALL PLYWOOD SHEATHING WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.

SAWN LUMBER: HEM-FIR #1 OR BETTER, U.N.O. WWPA GRADING RULES. ALL DIMENSIONS NOTED ARE NOMINAL. WOOD BEARING ON OR WITHIN 1" OF CONCRETE OR CMU OR WITHIN 6" OF EARTH SHALL BE TREATED WITH AN APPROVED PRESERVATIVE. ALL NAILS ARE TO BE "COMMON." ALL NAILS IN TREATED TIMBER SHALL BE GALVANIZED. ALL FRAMING CONNECTORS NOTED ARE PER SIMPSON STRONG TIE COMPANY INC. OR ENGINEER APPROVED EQUAL. SEE MANUFACTURER'S REQUIREMENTS.

TREATED LUMBER SHALL BE BRANDED WITH A QUALITY CONTROL AGENCY MARK BY AMERICAN WOOD PROTECTION ASSOCIATION. ALL WOOD SHALL BE FIRE RETARDANT TREATED COMPLYING WITH ASTM E84 WITH A LISTED FLAME SPREAD INDEX OF 25 OR LESS.

PREFABRICATED WOOD TRUSSES

ROOF TRUSSES SHALL BE DESIGNED BY THE CERTIFIED MANUFACTURER FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS AND THE LOADS LISTED BELOW.
MAXIMUM TRUSS SPACING: 24" O.C.

TRUSS LOADING UNLESS NOTED OTHERWISE ON DRAWINGS:
TOP CHORD LIVE LOAD=25 PSF.
TOP CHORD DEAD LOAD=5 PSF.
BOTTOM CHORD LIVE LOAD=10 PSF.
BOTTOM CHORD DEAD LOAD=10 PSF.
ALL, PER IBC, UNINHABITABLE ATTICS SHALL BE DESIGNED FOR A LIVE LOAD OF 10 PSF.
ADDITIONAL LIVE LOAD: SNOW LOAD DUE TO DRIFTING SHALL BE INCLUDED AS REQUIRED BY THE BUILDING CODE.

TRUSSES TO BE FABRICATED BY A CERTIFIED MEMBER OF THE TRUSS PLATE INSTITUTE. DESIGN, FABRICATION AND ERECTION TO CONFORM TO THE TRUSS PLATE INSTITUTE STANDARDS. CONNECTOR PLATES SHALL BE ICC APPROVED WITH A MINIMUM SIZE OF 3"x5". ALL CHORD MEMBERS SHALL HAVE LUMBER GRADE STAMPS; ALL WEB MEMBERS SHALL HAVE GRADE STAMPS OR ALL WEB MEMBERS, FOR A GIVEN TRUSS, SHALL BE MADE FORM THE SAME LUMBER GRADE WITH AT LEAST 50% OF THE WEB MEMBERS BEARING A GRADE STAMP. TRUSS DESIGNS AND ERECTION PLANS SHALL BE BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON. ERECTION PLANS SHALL SHOW TRUSS SPACING, TRUSS MARK NUMBERS (CORRESPONDING TO THE DESIGN CALCULATIONS), CONCENTRATED LOADS, PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT PER IBC SECTION 2303.4.1.2 AS REQUIRED BY THE TRUSS DESIGN AND ERECTION BRACING. SHOP DRAWING SHALL INCLUDE, FOR EACH TYPE OF TRUSS, DIMENSIONS AND CONFIGURATIONS, NOMINAL LUMBER SIZE AND GRADE, SPECIFICATIONS FOR CONNECTOR PLATE USED, SIZE AND LOCATION OF EACH CONNECTOR AT EACH JOINT AND AMOUNT OF CAMBER IF REQUIRED. DESIGN CALCULATIONS, SHOP DRAWINGS AND ERECTION PLANS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.

TRUSSES SHALL BE FIRE RETARDANT TREATED COMPLYING WITH ASTM E84 WITH A LISTED FLAME SPREAD INDEX OF 25 OR LESS.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144 • (206) 284-0860

DATE:	OCT 2021
DRAWN:	RAH
CHECKED:	ZK
APPROVED:	MJB

No.	REVISION	DATE	APPD

MYRON J. BASDEN, STATE OF WASHINGTON, 46334, REGISTERED PROFESSIONAL ENGINEER
10/12/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
GENERAL STRUCTURAL NOTES

SHEET: S-1
OF: 7
JOB NO.: 20859
DWG: S_STND

SPECIAL INSPECTION SCHEDULE

VERIFICATION AND INSPECTION	CI	PI	REMARKS/REFERENCES
CONCRETE:			
REINFORCING STEEL INCLUDING PLACEMENT	-	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3
ANCHOR RODS, EMBEDDED BOLTS AND INSERTS	X	-	PRIOR TO AND DURING PLACEMENT OF CONCRETE
USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4
CONCRETE SLUMP, AIR CONTENT, TEMPERATURE AND TEST SPECIMENS	X	-	WHILE MAKING SPECIMENS FOR STRENGTH TESTS
CONCRETE AND SHOTCRETE PLACEMENT	X	-	ACI 318: 26.5
CONCRETE CURING	-	X	ACI 318: 26.5.3-26.5.5
CONCRETE FORMWORK FOR SHAPE, LOCATIONS AND DIMENSIONS	-	X	ACI 318: 26.11.1.2(6)
MASONRY:			
PROVISIONS OF CONSTRUCTION DOCUMENTS AND SUBMITTALS	-	X	
VERIFICATION OF F'm and F'aac	-	X	PRIOR TO CONSTRUCTION
SLUMP FLOW AND VSI	X	-	
SITE-PREPARED MORTAR AND MORTAR JOINTS	-	X	BEGINS & PRIOR CONSTRUCTION
LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	-	X	AS MASONRY CONSTRUCTION BEGINS
SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	DURING CONSTRUCTION
ANCHOR TYPE, SIZE AND LOCATION	-	X	DURING CONSTRUCTION
SIZE, GRADE AND TYPE OF REINFORCEMENT, BOLTS AND ANCHORAGES	-	X	DURING/PRIOR CONSTRUCTION
HOT/COLD WEATHER CONSTRUCTION	-	X	DURING CONSTRUCTION
GROUT SPACE	-	X	PRIOR TO GROUTING
SOILS:			
VERIFY DESIGN BEARING CAPACITY	-	X	
VERIFY EXCAVATIONS	-	X	
CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	X	
USE OF MATERIALS, DENSITIES AND LIFT THICKNESSES	X	-	DURING PLACEMENT AND COMPACTION
OBSERVE SUBGRADE AND SITE PREPARED PROPERLY	-	X	PRIOR TO PLACEMENT OF COMPACTED FILL
WOOD:			
TYPE AND SPACING OF STRUCTURAL PANEL NAILING	-	X	IBC 1705.11.3
TYPE AND INSTALLATION OF TRUSS SEISMIC TIES	-	X	

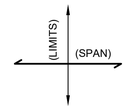
INSPECTION SCHEDULE NOTES

1. ITEMS MARKED WITH AN "X" REQUIRE INSPECTION BY A SPECIAL INSPECTOR APPROVED BY THE BUILDING OFFICIAL.
2. ITEMS MARKED "NA" ARE NOT APPLICABLE TO THIS PROJECT.
3. CI = CONTINUOUS INSPECTION DURING PROGRESS OF WORK BY SPECIAL INSPECTOR.
4. PI = PERIODIC INSPECTION BY SPECIAL INSPECTOR AS REQUIRED TO CONFIRM CONFORMANCE OF WORK.
5. TESTING AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER, BUILDING OFFICIAL AND CONTRACTOR.
6. CONTRACTOR WILL CONTRACT FOR SPECIAL INSPECTION SERVICES.

SUPPLEMENTAL STRUCTURAL ABBREVIATIONS:

ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ADD'L	ADDITIONAL
ADJ	ADJACENT
AL	ALUMINUM
APPRX	APPROXIMATE
ARCH	ARCHITECTURAL
@	AT
BEL	BELOW
BF	BRACED FRAME
BM	BEAM
BN	BOUNDRY NAIL
BNDRY	BOUNDRY
BO	BOTTOM OF
BOS	BOTTOM OF SLAB
BOT	BOTTOM
BRDG	BRIDGE(ING)
BRG	BEARING
CAM	CAMBER(ED)
CANT	CANTILEVER(ED)
CDF	CONTROLLED DENSITY FILL
CG	CENTER OF GRAVITY
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
COL	COLUMN
CONST	CONSTRUCTION
CONT	CONTINUOUS
CTSK	COUNTERSINK
D	DEPTH
d	PENNY (NAILS)
DBL	DOUBLE
DF	DOUGLAS FIR
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
do	DITTO (DO OVER)
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EMBD	EMBED(MENT)
EN	EDGE NAIL
ENG	ENGINEER
EQ	EQUAL
ES	EACH SIDE
EXIST	EXISTING MEMBER
EXT	EXTERIOR
FFE	FINISHED FLOOR ELEVATION
FN	FACE NAIL
FND	FOUNDATION
FO	FACE OF
FRM'G	FRAMING
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE
GB	GRADE BEAM
GLB	GLUE-LAMINATED BEAM
HAS	HEADER ANCHOR STUDS
HDR	HEADER
HF	HEM-FIR
HGR	HANGER
HSB	HIGH STRENGTH BOLT (A325 UNO)
HSS	HOLLOW STRUCTURAL STEEL
IBC	INTERNATIONAL BUILDING CODE
IF	INSIDE FACE
INT	INTERIOR
JST	JOIST
K	KIPS (1000 POUNDS)
LAT	LATERAL
LDGR	LEDGER
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LS	LAG SCREW
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER
MAS	MASONRY
MAT'L	MATERIAL
MB	MACHINE BOLT (A307)
MFR	MANUFACTURER
MRF	MOMENT RESISTING FRAME
MTL	METAL
(N)	NEW MEMBER
NS	NEAR SIDE
OH	OVERHANG
ORNT	ORIENTATE (ION)
PAR	PARALLEL
P/C	PRECAST CONCRETE
PERP	PERPENDICULAR
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREAT(ED)
P/T	POST TENSIONED
QTY	QUANTITY
REF	REFERENCE
REINF	REINFORCEMENT
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SKW	SKEW(ED)
SPC	SPACING
SS	STAINLESS STEEL
STGR	STAGGER
STIFF	STIFFENER
STIRR	STIRRUP
STRUC	STRUCTURE(AL)
SYM	SYMMETRICAL
T	TOP
T&G	TONGUE AND GROOVE
TMPRY	TEMPORARY
TN	TOE NAIL
TO	TOP OF
TOS	TOP OF SLAB
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VFY	VERIFY
WHS	WELDED HEADED STUD
WP	WORK POINT
WS	WESTERN SPECIES
WTS	WELDED THREADED STUD
X-STG	EXTRA STRONG
XX-STG	DOUBLE EXTRA STRONG

STRUCTURAL LEGEND



GRATING OR STRUCTURAL SPAN

DIFFERENCE IN ELEVATIONS

ELEVATION TARGET (REF.)

HANDRAILING

REMOVABLE HANDRAIL

℄ CENTERLINE

℄ PLATE

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
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SEATTLE, WASHINGTON 98144 • (206) 284-3880

DATE: OCT 2021	DRAWN: RAH	CHECKED: ZK	APPROVED: MJB

No.	REVISION	DATE	APPD

10/12/21

CITY OF BRIDGEPORT
WASHINGTON
DOUGLAS COUNTY

EMERGENCY FIRE RESPONSE SERVICES

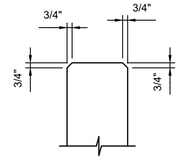
SPECIAL INSPECTION SCHEDULE, SUPPLEMENTAL STRUCTURAL ABBREVIATIONS, AND STRUCTURAL LEGEND

SHEET: S-2
OF: 7

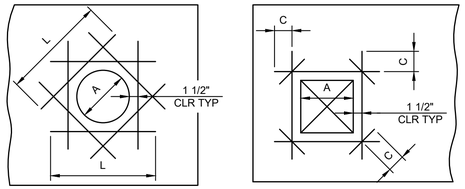
JOB NO.: 20859
DWG: S_STND

REINF	LAP
#4	2'-4"
#5	3'-0"
#6	3'-6"
#7	4'-3"
#8	4'-10"
#9	5'-3"
#10	6'-6"
#11	8'-0"

1 TYP — **TYP LAP SCHEDULE**
NOT TO SCALE



2 TYP — **TYP CHAMFER DETAIL**
NOT TO SCALE



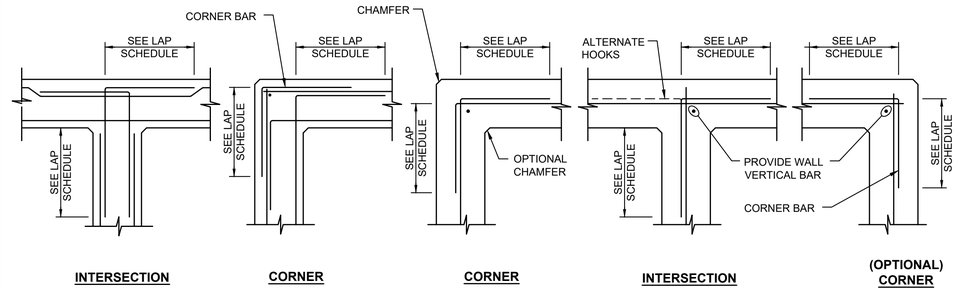
TYPE I **TYPE II**

	TYPE I		TYPE II	
OPENING SIZE (A)	MINIMUM BAR LENGTH (L)	BAR SIZE	(C)	BAR SIZE
0" - 12"	3' - 9"	#5	1' - 0"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS
13" - 18"	4' - 9"	#6	1' - 3"	
19" - 24"	6' - 9"	MATCH VERTICAL BARS OR LARGEST BAR IN SLABS OR WALKWAYS	2' - 6"	
25" - 36"	7' - 9"		2' - 6"	
36" ⟶	8' - 9"		2' - 6"	

NOTE:

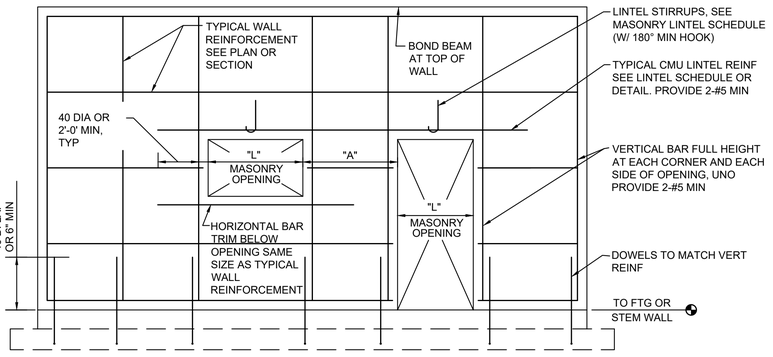
ALL BARS, EACH FACE. USE THESE BAR SIZES UNLESS OTHERWISE NOTED.

3 TYP — **TYP PENETRATION REINFORCING DETAIL**
NOT TO SCALE



DOUBLE CURTAIN **SINGLE CURTAIN**

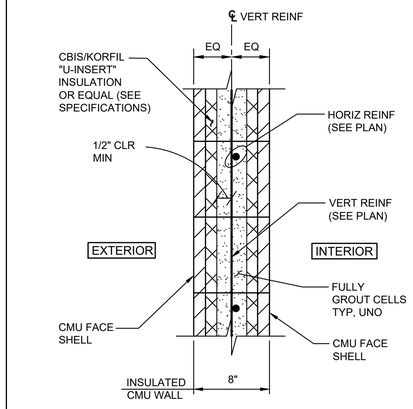
4 TYP — **TYP REINFORCING @ WALL INTERSECTION DETAIL**
NOT TO SCALE



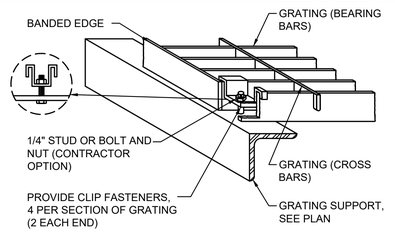
NOTES:

1. WHERE DISTANCE "A" IS BETWEEN 1'-4" AND 2'-0", PROVIDE #3 ⟲ TIES AT 8" OC FULL HEIGHT OF THE SMALLER OF THE TWO OPENINGS.
2. DISTANCE "A" SHALL NOT BE LESS THAN 1'-4".
3. PROVIDE CONTINUOUS BOND BEAM W/2-#5 MIN AT ALL LEDGERS, UNO
4. SEE CMU WALL CONTROL JOINT DETAIL AND PLAN FOR LOCATION.

5 TYP — **TYPICAL CMU WALL REINFORCEMENT PLACEMENT**
NOT TO SCALE



6 TYP — **TYPICAL 8" INSULATED CMU WALL DETAIL**
SCALE:1 1/2"=1'-0"



CLIP FASTENER
SCALE: 3"=1'-0"

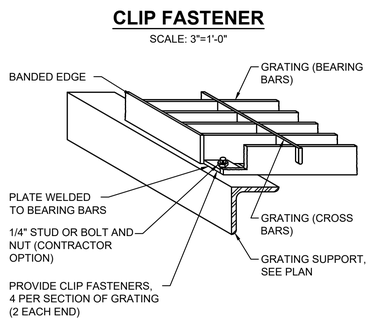
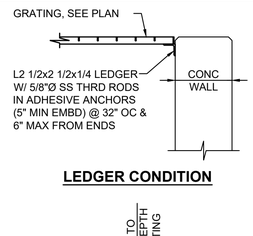
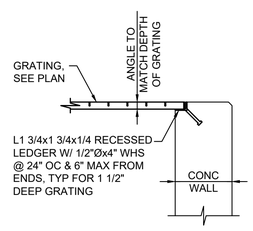


PLATE FASTENER (ALTERNATE OPTION)
SCALE: 3"=1'-0"



LEDGER CONDITION

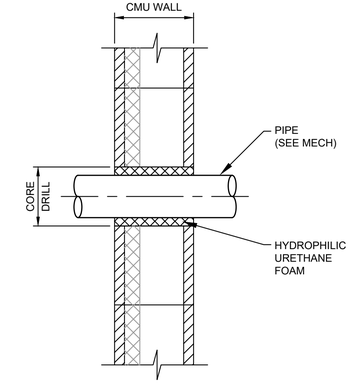


RECESSED LEDGER CONDITION

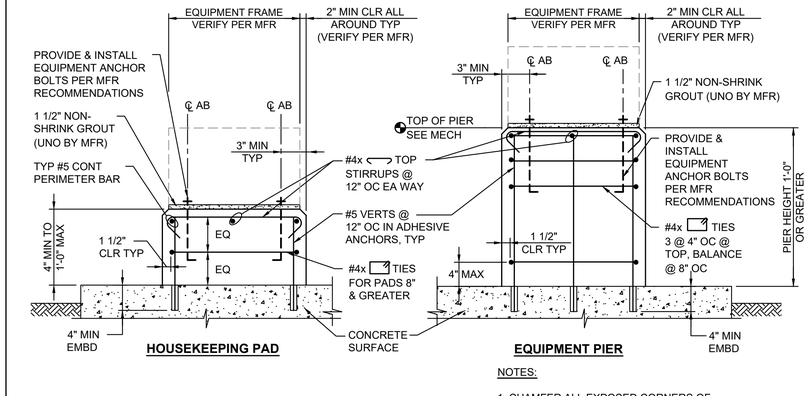
NOTES:

1. NUMBER OF FASTENERS REQUIRED PER GRATING SECTION SHALL BE SPECIFIED BY THE GRATING MANUFACTURER, WITH A MINIMUM OF 2 FASTENERS EACH BEARING END PER SECTION.
2. "PLATE FASTENER" CONNECTION SHALL BE OPTIONAL UNLESS NOTED OTHERWISE ON THE PLANS.
3. MAX SPACING BETWEEN REMOVABLE SECTIONS SHALL BE 1".

7 TYP — **GRATING CONNECTION DETAIL**
SCALE: 3/4"=1'-0"



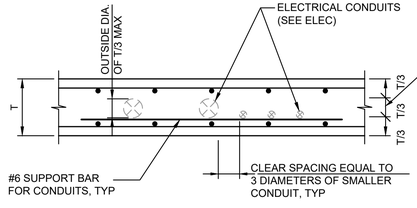
8 TYP — **TYPICAL CMU WALL PENETRATION**
NOT TO SCALE



NOTES:

1. CHAMFER ALL EXPOSED CORNERS OF HOUSEKEEPING PADS AND EQUIPMENT PIERS.
2. FOR PIER HEIGHT LESS THAN 1'-0" SEE HOUSEKEEPING PAD DETAIL

9 TYP — **TYP HOUSEKEEPING PAD & EQUIPMENT PIER DETAILS**
NOT TO SCALE



TYP DETAIL FOR ELECTRICAL CONDUITS EMBEDDED IN STRUCTURAL SLAB NOT CONTAINING LIQUID

10 TYP
NOT TO SCALE

NOTES:

1. ELECTRICAL CONDUITS NOT ALLOWED IN SLABS AND WALLS THAT CONTAIN LIQUID.
2. ELECTRICAL CONDUITS NOT ALLOWED IN SLABS LESS THAN 12" THICK.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144 • (206) 284-3880

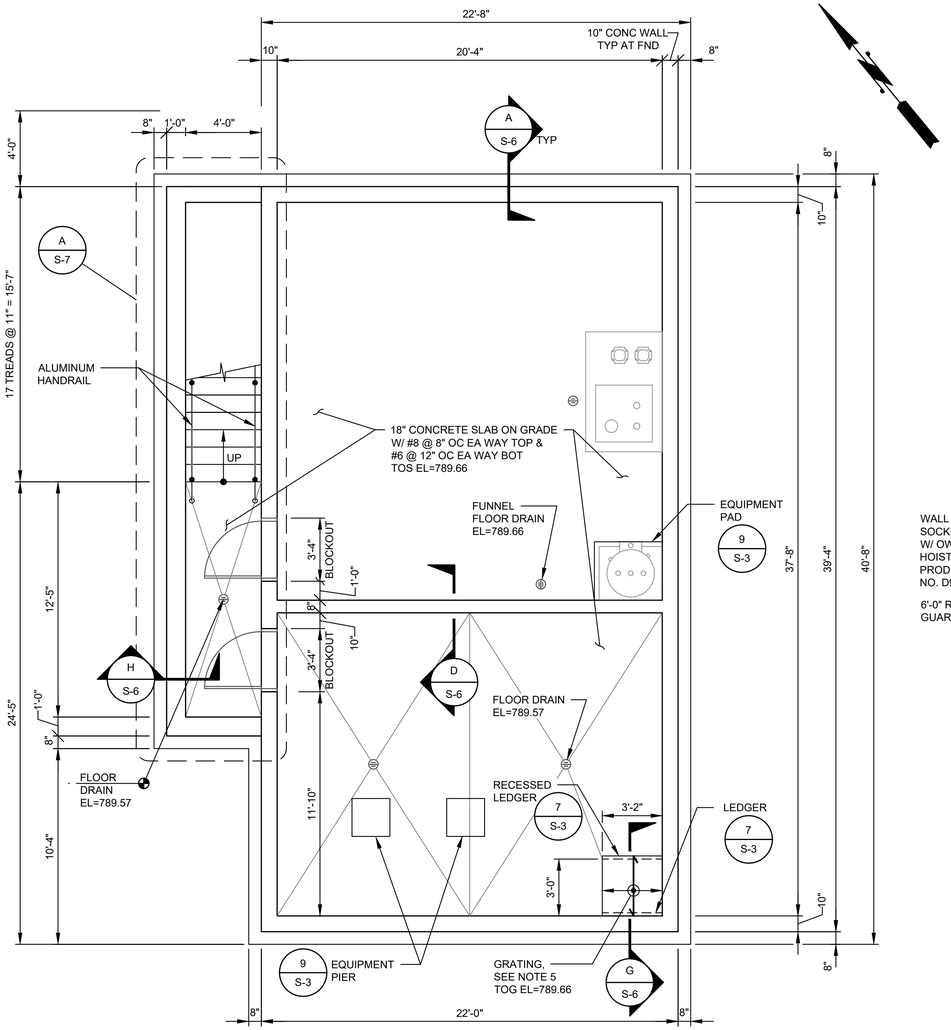
DATE:	OCT 2021
DRAWN:	RAH
CHECKED:	ZK
APPROVED:	MJB

No.	REVISION	DATE	APPD

MYRON J. RASDEN — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 45748 — 10/12/21

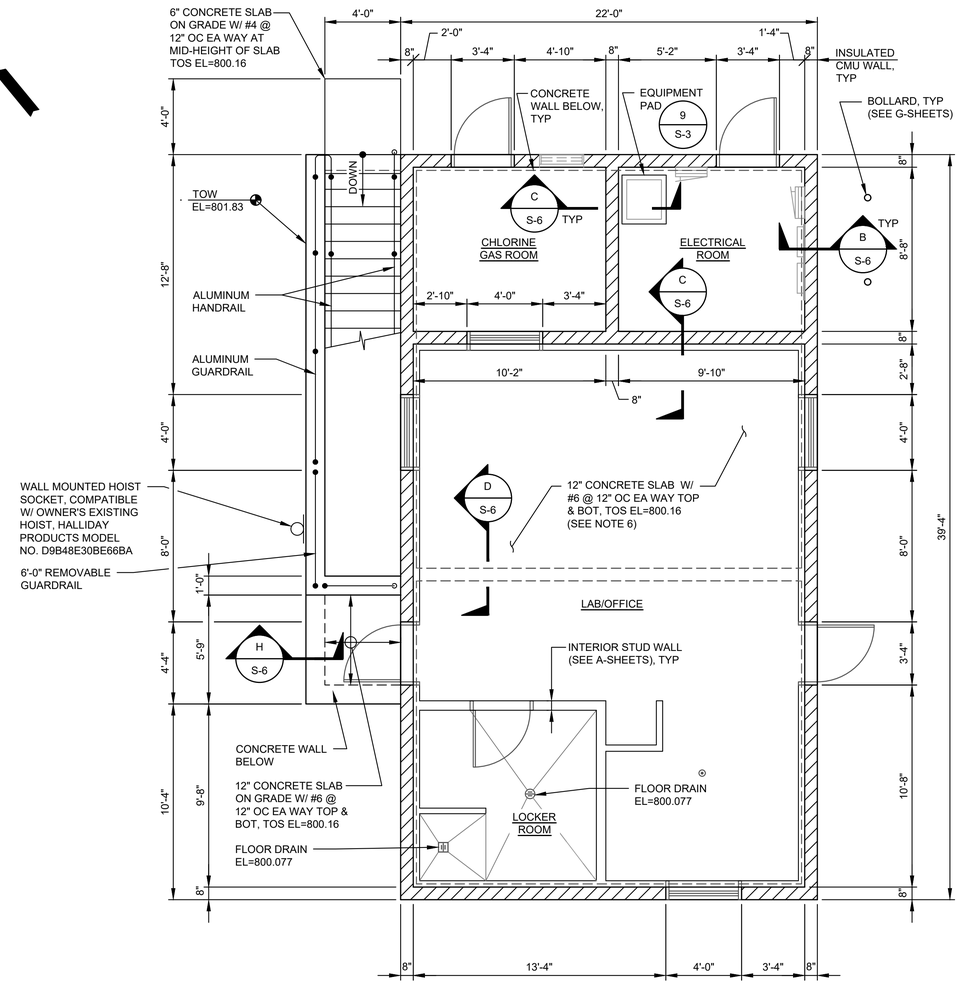
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
TYPICAL DETAILS

SHEET: S-3
OF: 7
JOB NO.: 20859
DWG: S_STND



FOUNDATION PLAN

SCALE: 1/4"=1'-0"



UPPER FLOOR PLAN

SCALE: 1/4"=1'-0"

NOTES:

1. SEE SHEETS S-1 THROUGH S-3 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
2. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE AND LOCATIONS OF ALL OPENINGS WITH MECHANICAL, ELECTRICAL, AND HVAC DRAWINGS.
3. DIMENSIONS SHOWN ON STRUCTURAL PLANS MUST BE VERIFIED BY THE CONTRACTOR BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF STRUCTURES PRIOR TO THEIR COMPLETION, INCLUDING PROTECTION OF BUILDING FROM UPLIFT PRESSURES DUE TO GROUNDWATER.
5. 1½" MOLDED FIBERGRATE GRATING WITH 1½"X1½" MESH. FABRICATE TO ALLOW FOR REMOVABLE SECTIONS AND PROVIDE 1"Ø PICK HOLES AT EACH CORNER OF GRATING SECTIONS. LIMIT WIDTHS OF INDIVIDUAL SECTIONS TO 4'-0".
6. PLACE CONCRETE SLAB MONOLITHICALLY WITHOUT CONSTRUCTION JOINTS.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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DATE:	OCT 2021	DRAWN:	RAH	CHECKED:	ZK	APPROVED:	MJB

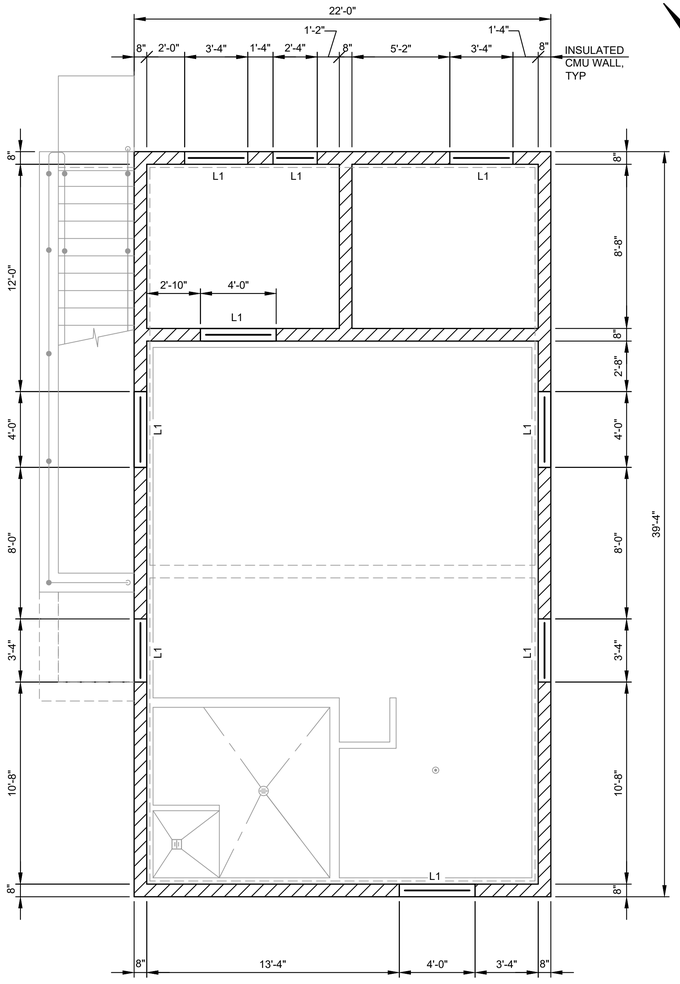
No.	REVISION	DATE	APPD

NORTON J. BASDEN — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 10/12/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
FOUNDATION AND FLOOR PLANS

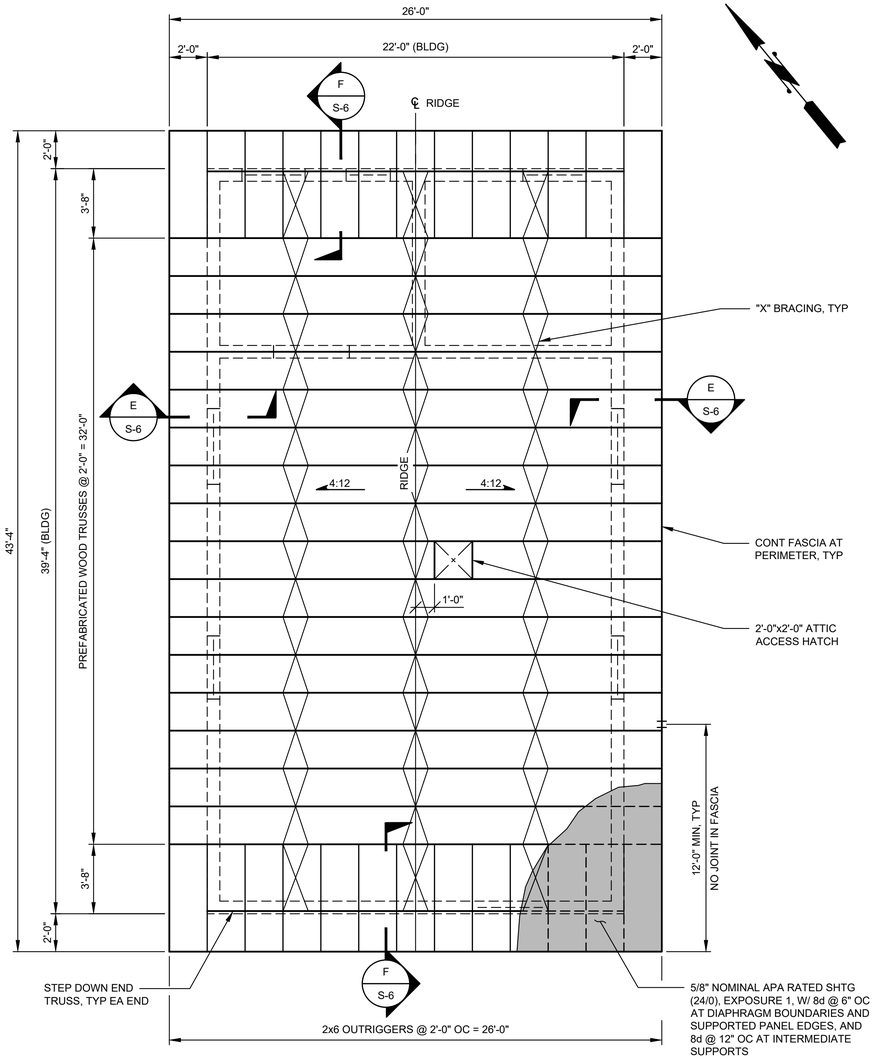
SHEET: S-4
OF: 7

JOB NO.: 20859
DWG: S_OPS_PLN



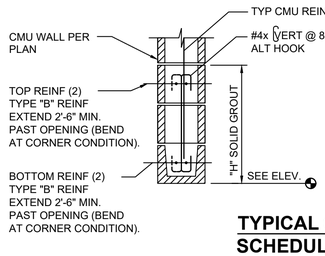
CMU WALL PLAN

SCALE: 1/4"=1'-0"



ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"



LINTEL SCHEDULE			
MARK	"H" (LINTEL HT)	"B" (REINF)	MASONRY OPENINGS
L1	16" HT	#5 BOT ONLY	4'-0" AND LESS

TYPICAL CMU WALL LINTEL SCHEDULE & DETAIL

NTS

NOTES:

1. LX DENOTES CMU LINTEL TYPE. SEE TYP CMU WALL LINTEL SCHEDULE & DETAIL ON THIS SHEET.

NOTES:

1. SEE SHEETS S-1 THROUGH S-3 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
2. NOT ALL PENETRATIONS MAY BE SHOWN. CONTRACTOR SHALL VERIFY NUMBER, SIZE AND LOCATIONS OF ALL OPENINGS WITH MECHANICAL, ELECTRICAL AND HVAC DRAWINGS.
3. DIMENSIONS SHOWN ON STRUCTURAL PLANS MUST BE VERIFIED BY THE CONTRACTOR BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
4. ALL WOOD MEMBERS, INCLUDING PREFABRICATED WOOD TRUSSES SHALL BE FIRE RETARDANT TREATED WOOD COMPLYING WITH ASTM E84 WITH A LISTED FLAME SPREAD INDEX OF 25 OR LESS.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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SEATTLE, WASHINGTON 98144 • (206) 284-3860

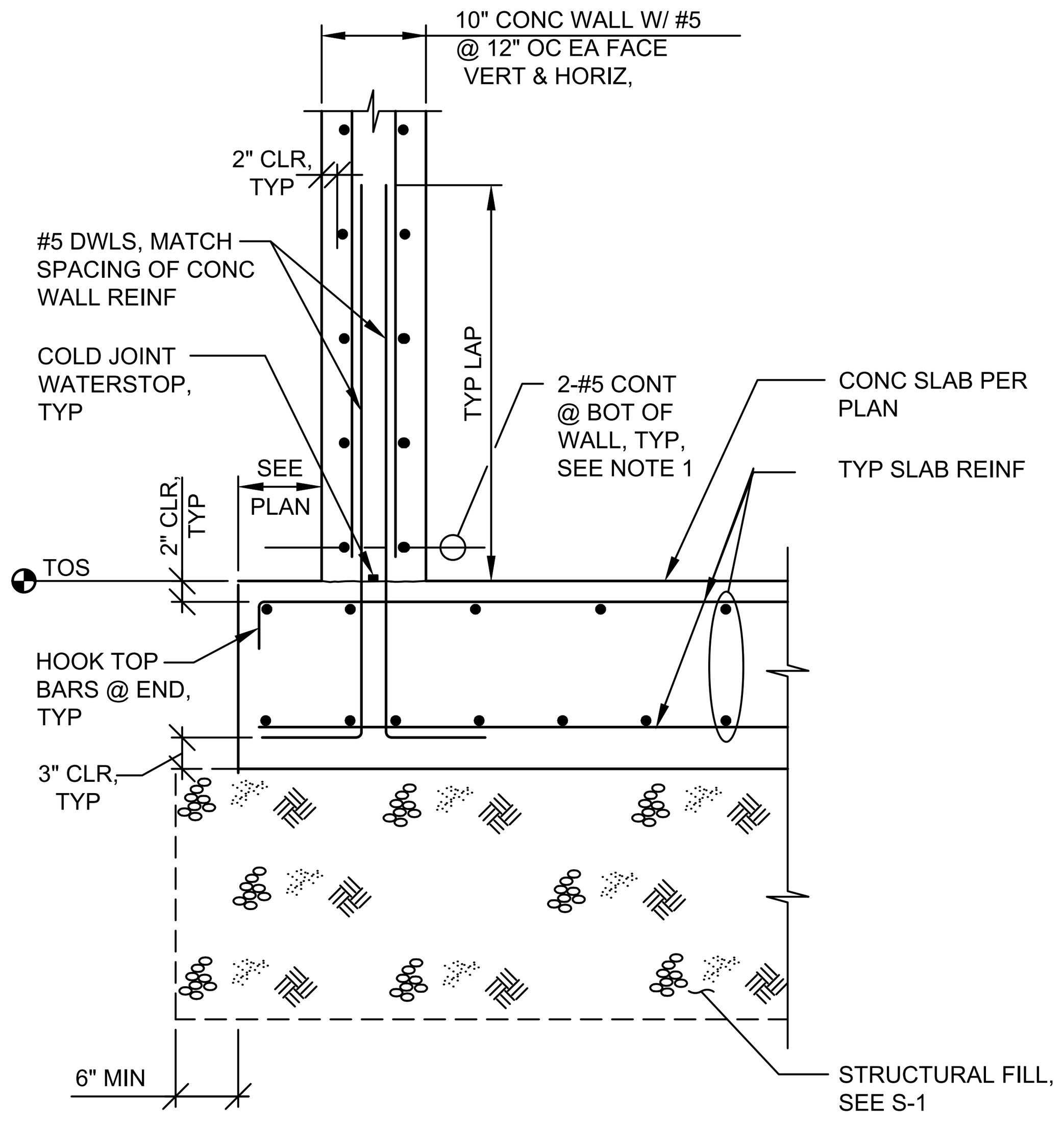
DATE:	OCT 2021	DRAWN:	RAH	CHECKED:	ZK	APPROVED:	MJB

No.	REVISION	DATE	APPD

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
CMU WALL AND ROOF FRAMING PLANS

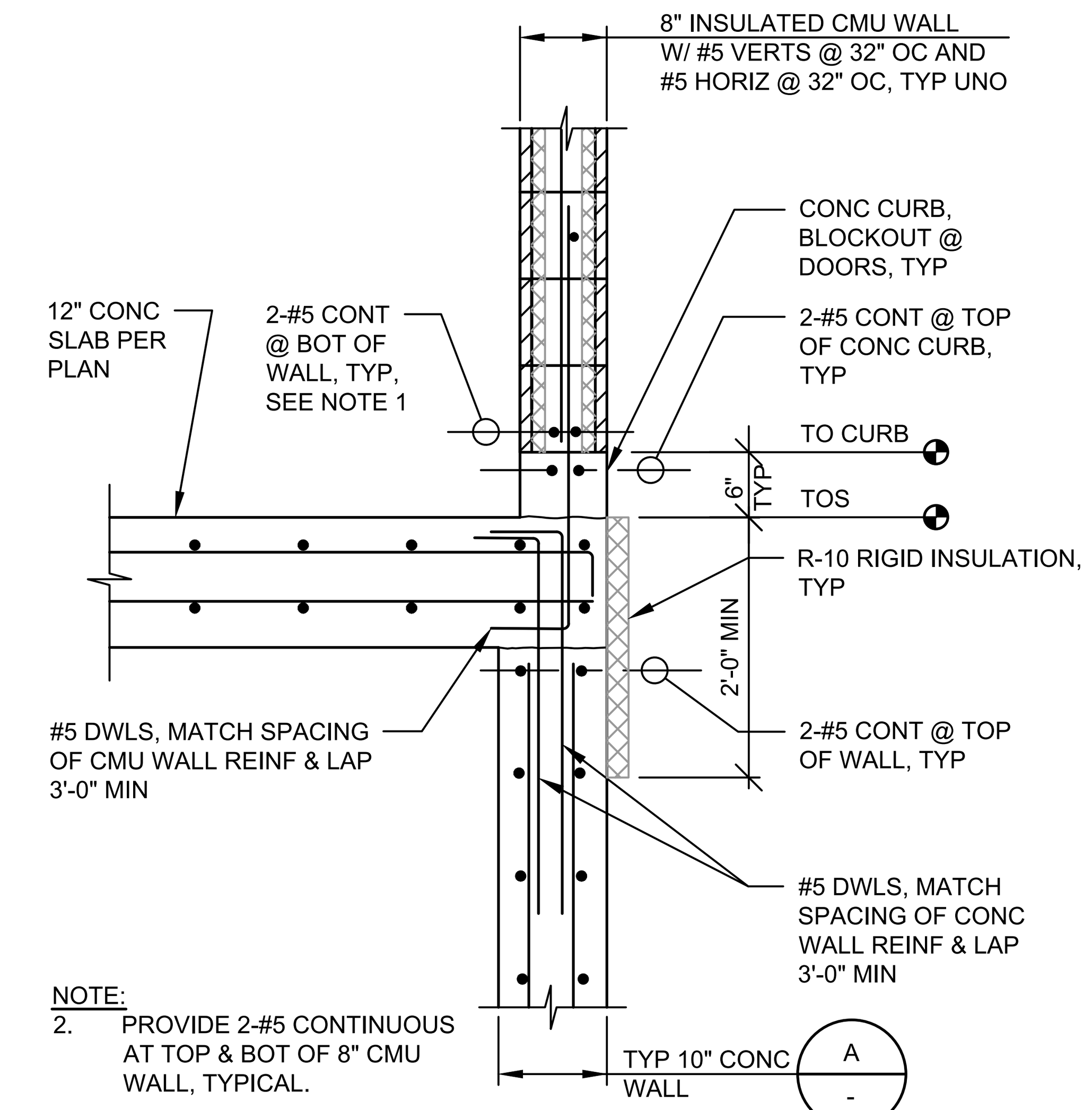
SHEET: S-5
OF: 7

JOB NO.: 20859
DWG: S_OPS_PLN



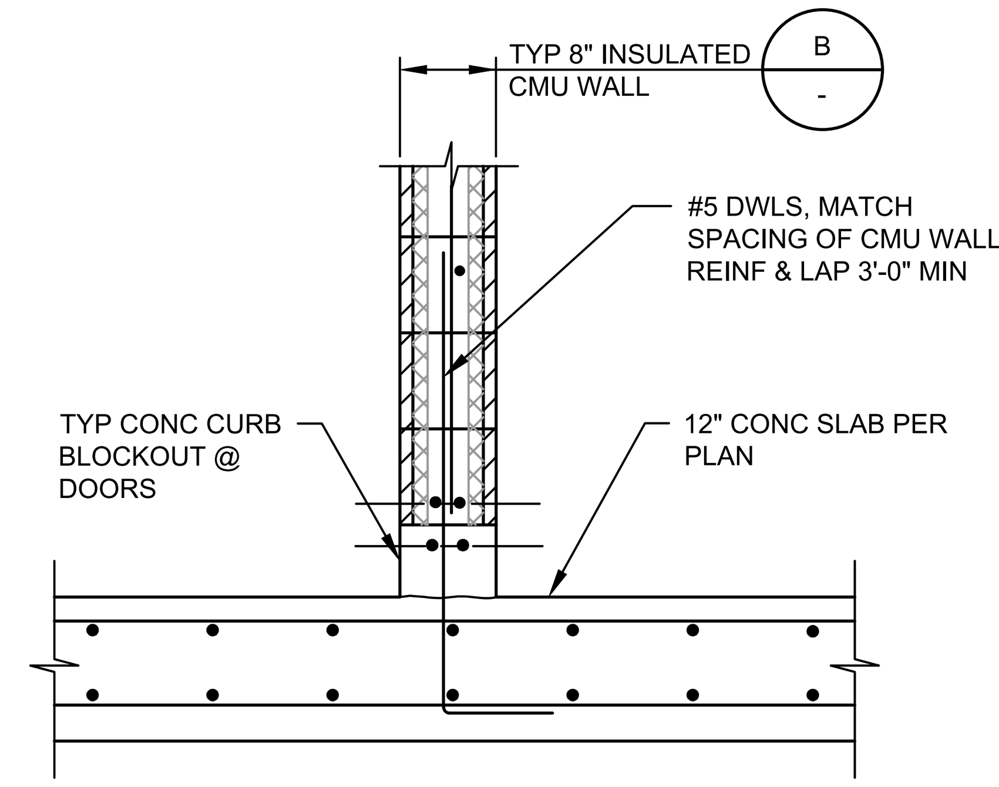
NOTE:
1. PROVIDE 2-#5 CONTINUOUS AT TOP & BOT OF CONCRETE WALL, TYPICAL.

A / S-4 SECTION
SCALE: 3/4"=1'-0"

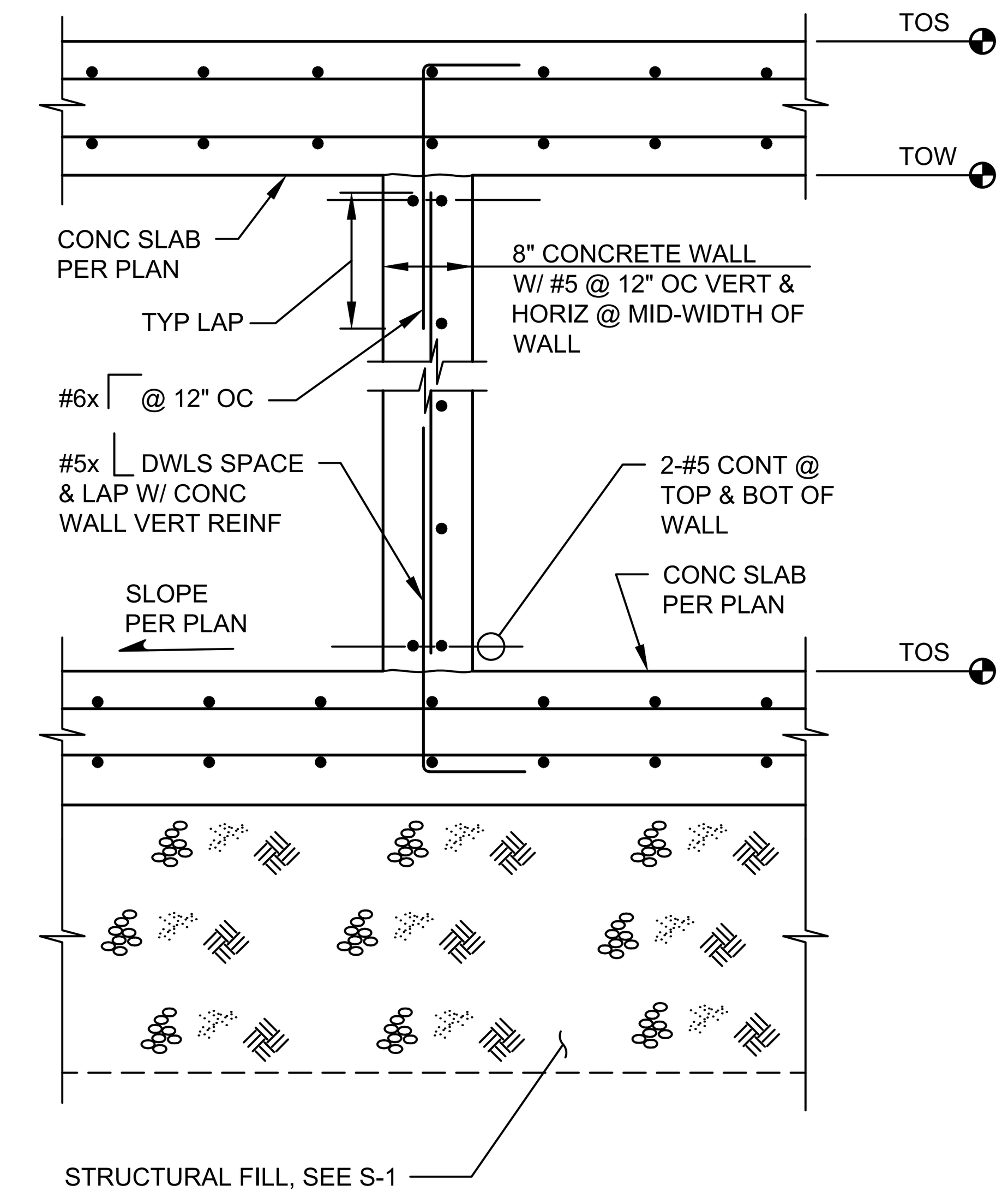


NOTE:
2. PROVIDE 2-#5 CONTINUOUS AT TOP & BOT OF 8" CMU WALL, TYPICAL.

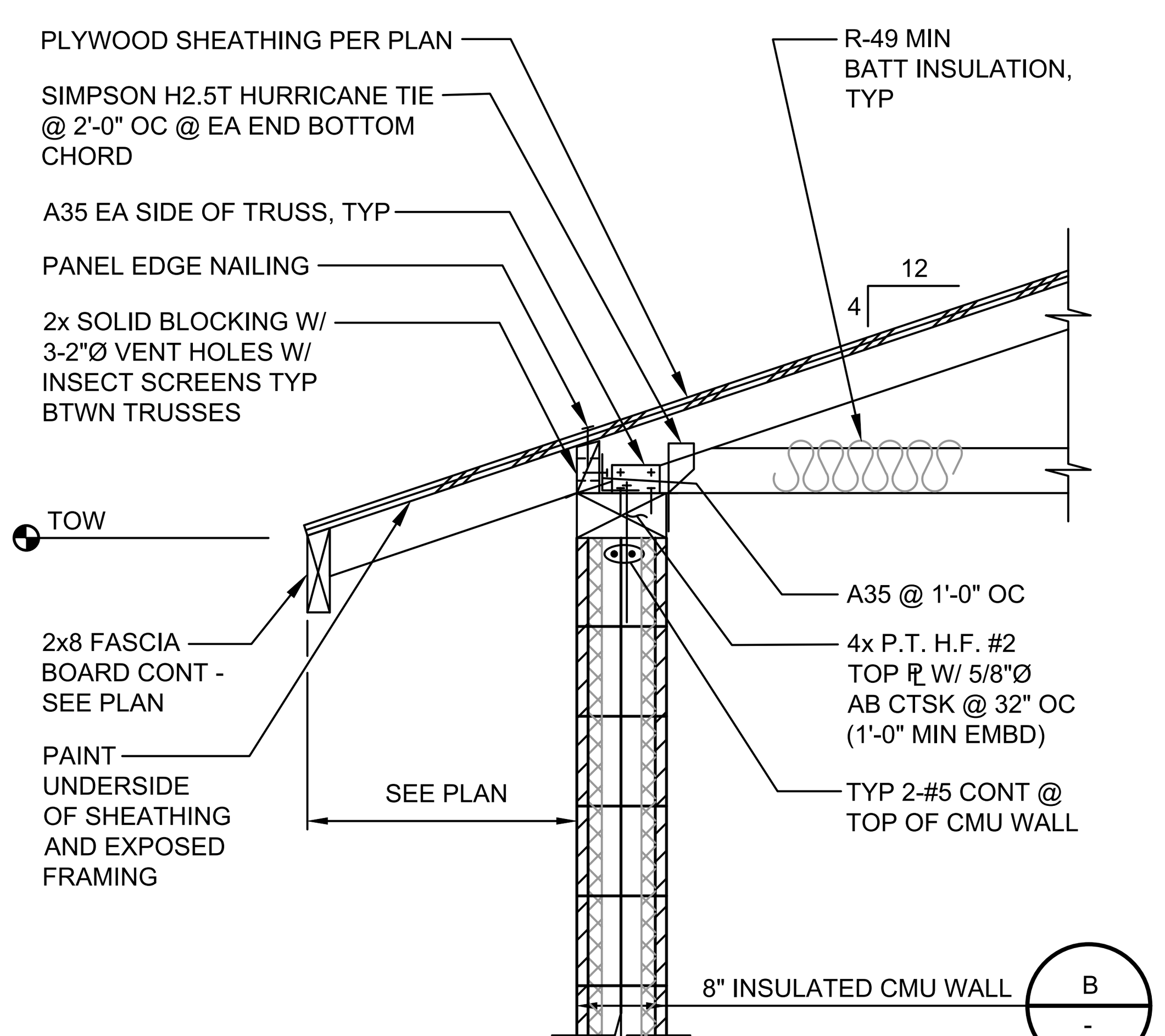
B / S-4 SECTION
SCALE: 3/4"=1'-0"



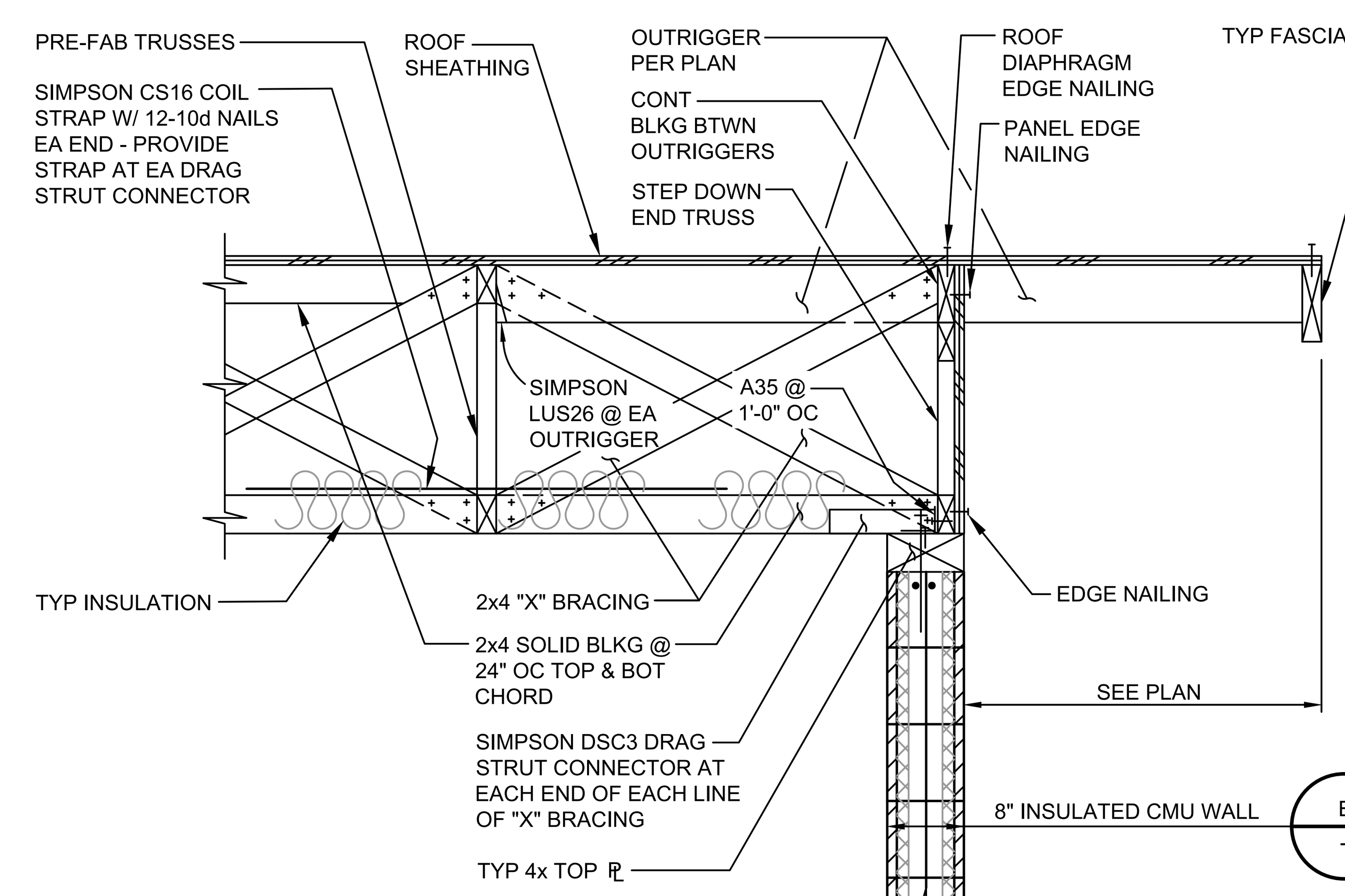
C / S-4 SECTION
SCALE: 3/4"=1'-0"



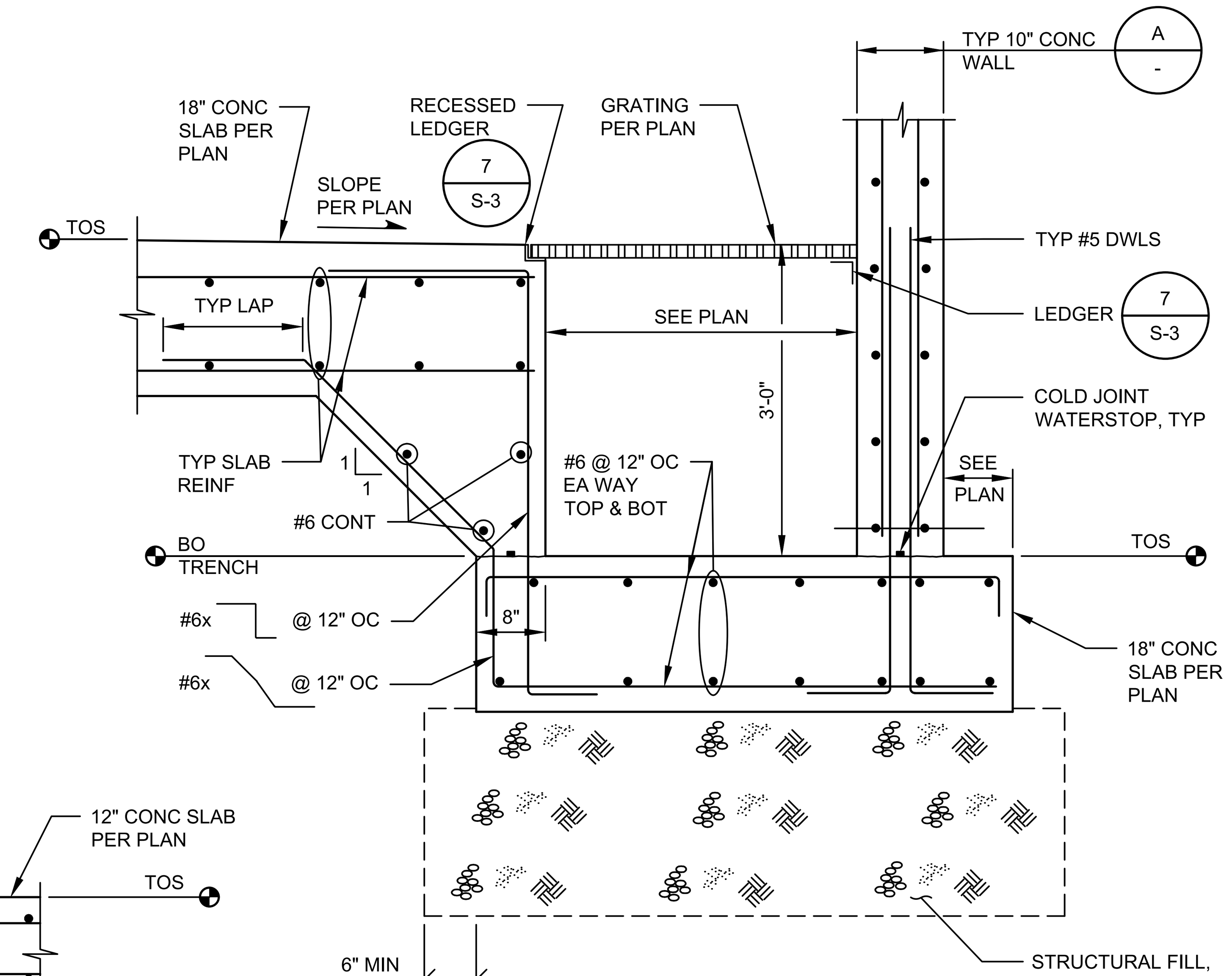
D / S-4 SECTION
SCALE: 3/4"=1'-0"



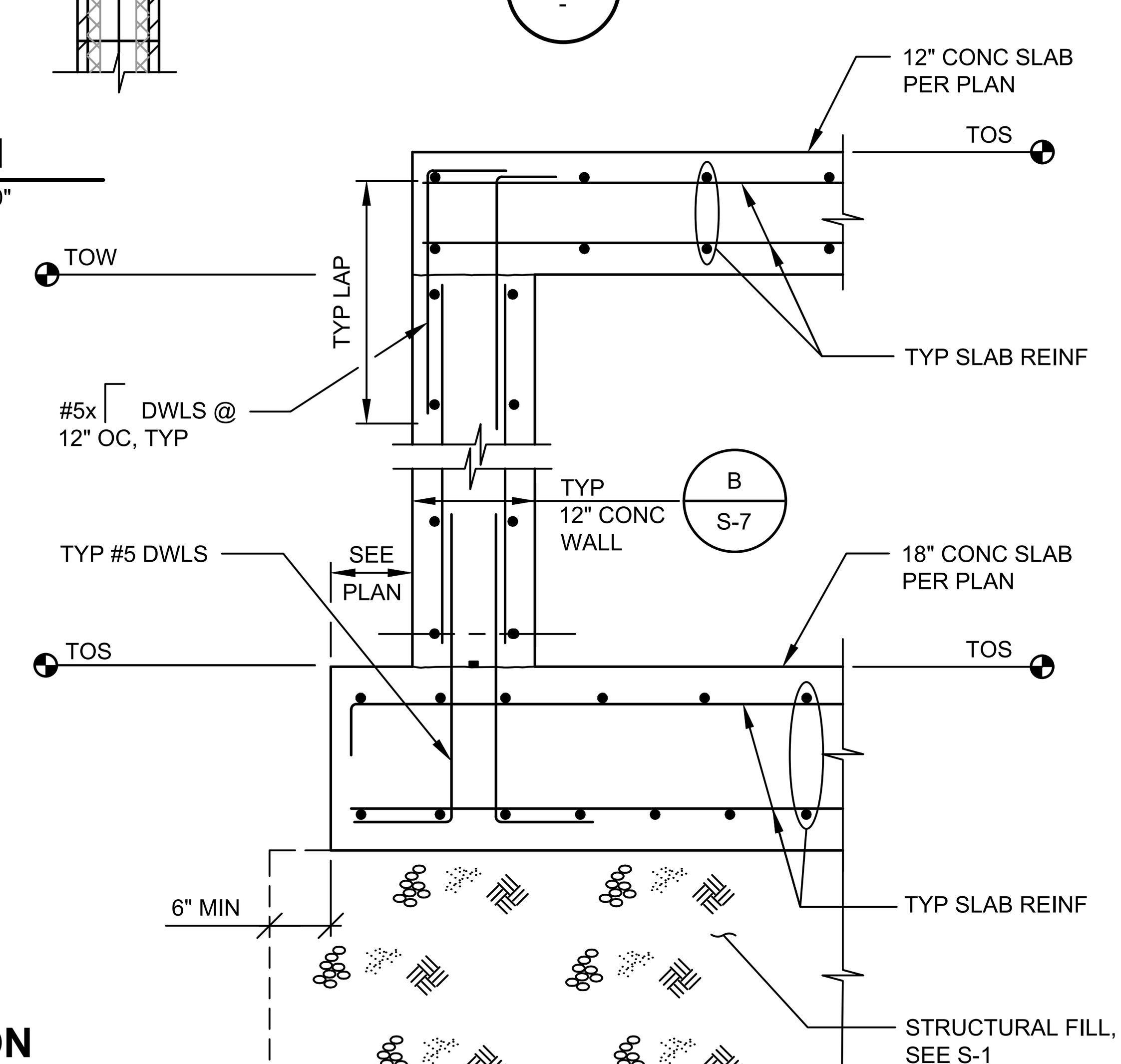
E / S-5 SECTION
SCALE: 3/4"=1'-0"



F / S-5 SECTION
SCALE: 3/4"=1'-0"



G / S-4 SECTION
SCALE: 3/4"=1'-0"



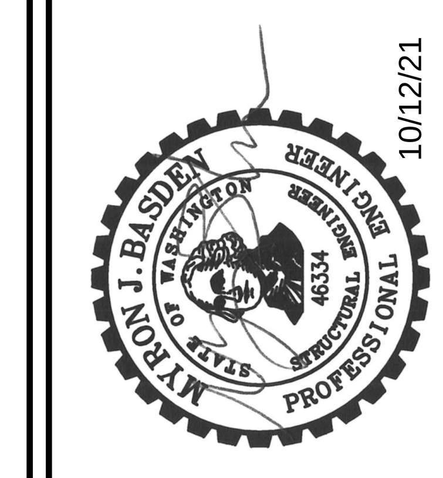
H / S-4 SECTION
SCALE: 3/4"=1'-0"

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
1130 RAINIER AVENUE SOUTH, SUITE 300
SEATTLE, WASHINGTON 98144 • (206) 284-0860

DATE:	OCT 2021
DRAWN:	RAH
CHECKED:	ZK
APPROVED:	MJB

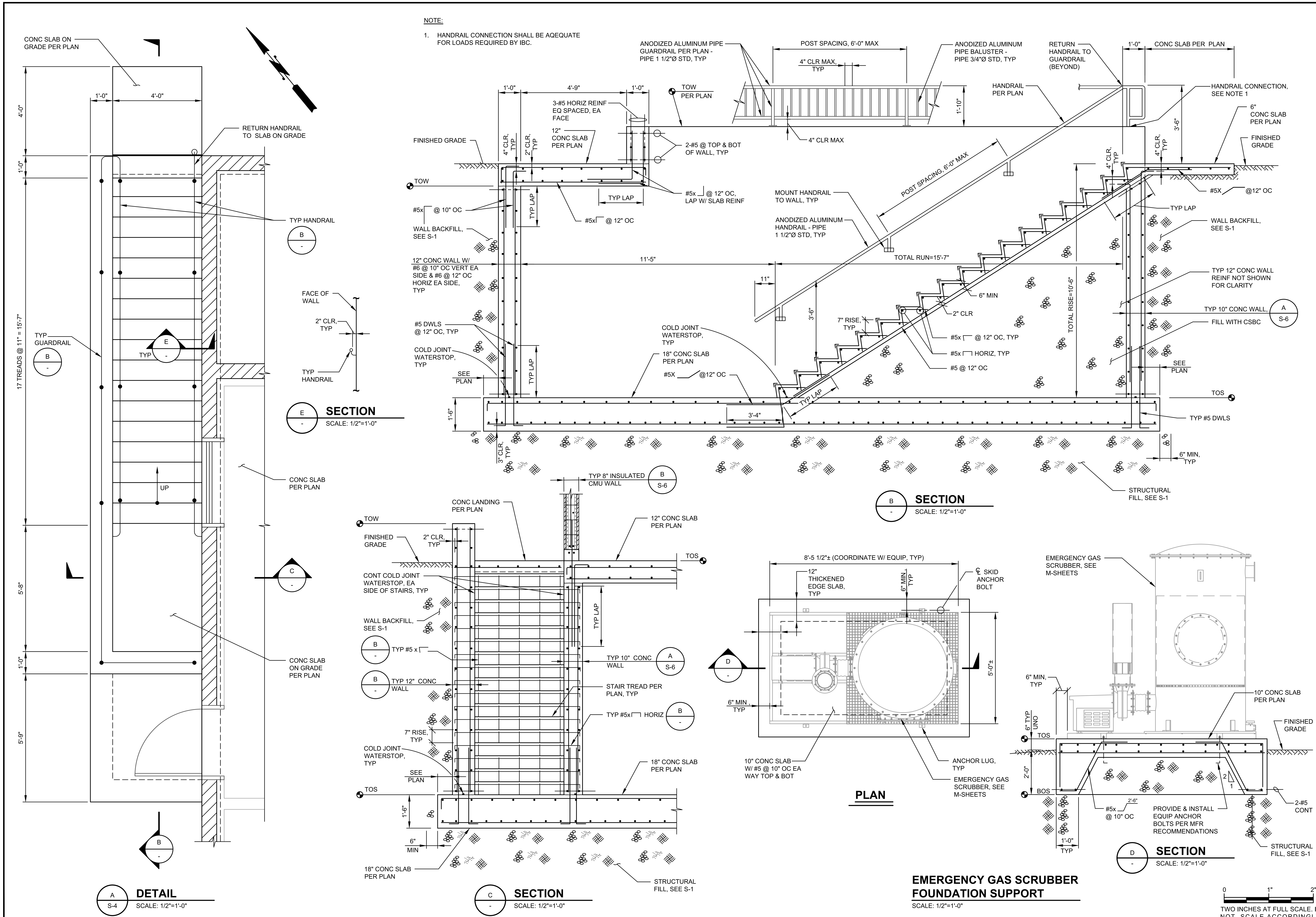
No.	REVISION	DATE	APP'D



CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
DETAILS

SHEET: S-6
OF: 7

JOB NO.: 20859
DWG: S_OPS_PLN



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DATE: OCT 2021
DRAWN: RAH
CHECKED: ZK
APPROVED: MJB

No.	REVISION	DATE	APPD

MYRON J. BASDEN — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — 46334 — 10/12/21

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES
DETAILS

SHEET: S-7
OF: 7
JOB NO.: 20859
DWG: S_OPS_PLN

ONE LINE DIAGRAMS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	DEVICE OR EQUIPMENT TERMINAL
	WIRING CONNECTED
	BUS
	WIRING
	EQUIPMENT/DEVICE ENCLOSURE
	PLUG-IN CONNECTION
	NON-AUTOMATIC BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUIT PROTECTOR)
	SWITCH
	CONTACTOR
	THERMAL OVERLOAD
	FUSE
	POWER TRANSFORMER
	CONTROL POWER TRANSFORMER
	CURRENT TRANSFORMER
	GROUND CONNECTION
	TRANSFER SWITCH
M	WATTHOUR METER (REVENUE METERING)
G	GENERATOR
S N	SOLID NEUTRAL
	MOTOR
	SAFETY DISCONNECT IN NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED
	AUXILIARY CONTACT
	NON-SWITCHED CONDUCTOR

PANEL ELEVATION DRAWINGS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
OFF (LEGEND PLATE)	PUSH BUTTON
ON R (LEGEND PLATE)	INDICATOR LIGHT
OFF HAND AUTO (LEGEND PLATE)	CONTROL STATION
SETPOINT (LEGEND PLATE)	POTENTIOMETER
	INDICATOR (ANALOG)
	INDICATOR (DIGITAL)
NP1	ENGRAVED NAMEPLATE

DESIGNATIONS: 1,2,3,ETC. ARE THE ITEMS IN NAMEPLATE SCHEDULE

ELEMENTARY WIRING DIAGRAMS SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	PANEL OR DEVICE WIRING
	FIELD WIRING
	EQUIPMENT/DEVICE ENCLOSURE
	WIRING CONNECTED
	WIRING NOT CONNECTED
	DEVICE OR EQUIPMENT TERMINAL
	CONTROL PANEL TERMINAL
	MCC TERMINAL
	TRANSFORMER WINDING
	FUSE
	GROUND
	ARC SUPPRESSOR (METAL OXIDE VARISTOR)
	DIODE
MTR	FRACTIONAL HORSEPOWER MOTOR

CONTACTBLOCK OPERATORS

SYMBOL (N.O. / N.C.)	DESCRIPTION
	PUSHBUTTON (1PB,2PB,ETC.)
	MUSHROOM HEAD PUSHBUTTON (1PB,2PB,ETC.)
"HAND OFF AUTO" A1-1SS	SELECTOR SWITCH (1SS,2SS,ETC.) "X" = CLOSED IN THIS POSITION
"OFF – ON" XX-1SS	OFF-ON SELECTOR SWITCH (1SS,2SS,ETC.) "X" = CLOSED IN THIS POSITION ARROW POSITION DENOTES OPEN/CLOSED STATUS (SHOWN IN "OPEN" POSITION)

CONTACTS

SYMBOL (N.O. / N.C.)	DESCRIPTION
	SINGLE BREAK CONTACTS
	DOUBLE BREAK CONTACTS (CONTACT BLOCKS

RELAY CONTACTS

SYMBOL (N.O. / N.C.)	DESCRIPTION
XXCR / XXCR	INSTANTANEOUS CONTACT OF RELAY (1CR, 2CR, ETC.)
XXTR / XXTR	TIMED DELAY CONTACT OF RELAY (DELAY ON ENERGIZATION-ON DELAY) (1TR, 2TR, ETC.)
XXTR / XXTR	TIMED DELAY CONTACT OF RELAY (DELAY ON DE-ENERGIZATION-OFF DELAY) (1TR, 2TR, ETC.)
X-OL / X-OL	OVERLOAD RELAY (1OL, 2OL, ETC.)

MECHANICALLY ACTUATED SWITCHES

SYMBOL (N.O. / N.C.)	DESCRIPTION
XXFS / XXFS	FLOAT SWITCHES (1FS, 2FS, ETC.)
XXTAS / XXTAS	TEMPERATURE ACTUATED SWITCH (THERMOSTAT) (1TAS, 2TAS, ETC.)
XXLS / XXLS	FREE — LIMIT SWITCHES (1LS, 2LS, ETC.)
XXLS / XXLS	HELD — LIMIT SWITCHES (1LS, 2LS, ETC.)

ABBREVIATIONS: N.O. = NORMALLY OPEN; N.C. = NORMALLY CLOSED

MAGNETIC COILS

SYMBOL	DESCRIPTION
XX XCR	CONTROL RELAY (1CR, 2CR, ETC.)
XX XTR	TIMED DELAY RELAY (1CR, 2CR, ETC.)
XX M	MAGNETIC MOTOR STARTER (1M, 2M, ETC.)
XX XCON	MAGNETIC CONTACTOR (1CON, 2CON, ETC.)
XX XMTR	DEVICE MOTOR DRIVE
	SOLENOID (1SV, 2SV, ETC.) (FOR VALVE UNLESS OTHERWISE NOTED)

PILOT LIGHTS

SYMBOL	DESCRIPTION
G CP-1LT	INCANDESCENT TRANSFORMER TYPE (1LT, 2LT, ETC.)
G CP-1LT	INCANDESCENT "PUSH-TO-TEST" (CONNECT TEST CIRCUIT TO LINE) (1LT, 2LT, ETC.)

LENS COLOR CODE: A = AMBER; B = BLUE; C = CLEAR; G = GREEN; O = ORANGE; R = RED; W = WHITE; Y = YELLOW

ELECTRICAL PLAN DRAWINGS SYMBOL SCHEDULE

POWER DISTRIBUTION AND CONTROL

SYMBOL	DESCRIPTION
	DISTRIBUTION/CONTROL EQUIPMENT – FLOOR MOUNTED
	DISTRIBUTION/CONTROL EQUIPMENT – WALL MOUNTED
	PANELBOARD – WALL MOUNTED
	SWITCH (SAFETY OR DISCONNECT)
	SWITCH (FUSIBLE)
	MOTOR STARTER WITH SWITCH OR BREAKER (COMBINATION MAGNETIC STARTER)

LIGHTING FIXTURES

SYMBOL	DESCRIPTION
A b	ROUND FIXTURE CEILING MOUNTED (RECESSED, SURFACE, OR PENDANT)
DD b	LIGHTING FIXTURE POLE ARM MOUNTED
E	LINEAR FIXTURE CEILING MOUNTED (RECESSED, SURFACE OR PENDANT)
C a	FIXTURE WALL MOUNTED (RECESSED, SURFACE OR ARM)

DESIGNATIONS:
- A,B,C,ETC. ARE FIXTURE TYPE, REFER TO LIGHTING FIXTURE SCHEDULE
- 1,2,3,ETC. ARE CIRCUIT NUMBERS OF PANELBOARD TO WHICH FIXTURE IS TO BE CONNECTED. REFER TO CIRCUIT SCHEDULE
- a,b,c,ETC. ARE SWITCHING CONTROL REFERENCE

SWITCHING

SYMBOL	DESCRIPTION
$P3a	SINGLE POLE SWITCH – WALL MOUNTED

DESIGNATIONS
- M MOTOR RATED SWITCH; P SWITCH W/ PILOT LIGHT
- 3 THREE WAY SWITCH; OS OCCUPANCY SENSOR
- T TIME SWITCH; a LOWER CASE = SWITCH LEG

ANY COMBINATION OF THE ABOVE DESIGNATIONS MAY BE SHOWN ON PLANS

RECEPTACLE OUTLETS

SYMBOL	DESCRIPTION
WP GFCI 2	DUPLEX RECEPTACLE OUTLET – WALL MOUNTED (NEMA 5-15R UNLESS OTHERWISE SPECIFIED)
6	QUADRUPLEX RECEPTACLE OUTLET – WALL MOUNTED
4	SPECIAL PURPOSE RECEPTACLE OUTLET
6	SPECIAL PURPOSE RECEPTACLE OUTLET – WALL MOUNTED
2	DUPLEX RECEPTACLE OUTLET – WALL MOUNTED ((NEMA 5-15R) 4" O.C. ABOVE BACKSPLASH OR COUNTER TOP IF NO BACKSPLASH (VERIFY HEIGHT WITH ARCHITECTURAL ELEVATIONS)

DESIGNATIONS:
- 1,2,3,ETC. ARE CIRCUIT NUMBERS OF PANELBOARD TO WHICH OUTLET IS TO BE CONNECTED. REFER TO CIRCUIT SCHEDULE
- H = HORIZONTAL; WP = WEATHERPROOF; USB = USB CHARGING; GFCI = GROUND FAULT CIRCUIT INTERRUPTER

SPECIAL PURPOSE CONNECTIONS

SYMBOL	DESCRIPTION
4	SPECIAL PURPOSE EQUIPMENT CONNECTION
6	SPECIAL PURPOSE EQUIPMENT CONNECTION – WALL MOUNTED

MECHANICALLY ACTUATED SWITCHES

SYMBOL	DESCRIPTION
FS	FLOAT SWITCH
LT	LEVEL TRANSDUCER
VS	FLOW (VELOCITY) SWITCH

NOTIFICATION SYSTEM

SYMBOL	DESCRIPTION
	PUSHBUTTON (MOMENTARY)
	PUSHBUTTON (HELD, TURN-TO-RESET)
	ALARM HORN

TELECOMMUNICATIONS SYSTEM

SYMBOL	DESCRIPTION
	COMMUNICATIONS DEVICE BOX. PROVIDE DEEP DEPTH DOUBLE GANG DEVICE BOX (2.5" MINIMUM DEPTH) WITH SINGLE GANG MUD RING. PROVIDE ONE 1" CONDUIT FROM DEVICE BOX CONCEALED IN WALL.
	# = NUMBER OF CATEGORY 6 8P8C (RJ-45) PORTS AND CATEGORY 6 CABLES
	COMMUNICATIONS DEVICE BOX – MOUNTED 4" O.C. ABOVE BACKSPLASH. (VERIFY HEIGHT WITH ARCHITECTURAL ELEVATIONS).
WAP	WIRELESS ACCESS POINT. PROVIDE DEEP DEPTH DOUBLE GANG DEVICE BOX, ONE CATEGORY 6 8P8C (RJ-45), ONE CATEGORY 6 CABLE
	COMMUNICATIONS SURFACE MOUNT DATA JACK PROVIDE ONE CATEGORY 6 8P8C (RJ-45) SURFACE MOUNTED INSIDE ENCLOSURE, ONE CATEGORY 6 CABLE (UNLESS OTHERWISE NOTED)

GENERAL WIRING SYMBOLS

SYMBOL	DESCRIPTION
J	JUNCTION BOX
J	JUNCTION BOX – WALL MOUNTED
	WIRING RUN CONCEALED IN BUILDING OR STRUCTURE UNLESS OTHERWISE NOTED ON DRAWINGS
	WIRING RUN CONCEALED UNDER SLAB OR BELOW GRADE UNLESS OTHERWISE NOTED ON DRAWINGS
G #10	INDICATES WIRE SIZE IF OTHER THAN #12AWG; LINE OR PHASE CONDUCTOR; NEUTRAL CONDUCTOR; GROUNDING CONDUCTOR — CROSSMARKS INDICATE QUANTITY AND USE OF CONDUCTORS
2 PPA	ARROWHEAD INDICATES HOMERUN TO EQUIPMENT/DEVICE NOTED AT END OF ARROWHEAD, NUMBER (WHERE NOTED) INDICATES CIRCUIT WITHIN EQUIPMENT/DEVICE NOTED.
	CONDUIT TURN UP
	CONDUIT TURN DOWN

GENERAL ELECTRICAL ACRONYMS AND ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AFC	AVAILABLE FAULT CURRENT
AI	ANALOG INPUT
AL	ALUMINUM
AO	ANALOG OUTPUT
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAT6	UNSHIELDED CATEGORY 6 CABLE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NONMETALLIC TUBING
EWD	ELEMENTARY WIRING DIAGRAM
FMC	FLEXIBLE METAL CONDUIT
FU	FUSE
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
G	GROUNDING CONDUCTOR
GFP	GROUND FAULT PROTECTOR
HMI	HUMAN MACHINE INTERFACE
HP	HORSEPOWER
IC	INTERRUPTING CAPACITY
ISB	INTRINSICALLY SAFE BARRIER
ISR	INTRINSICALLY SAFE RELAY
KA	KILO AMPERES
KCMIL	THOUSAND CIRCULAR MILLS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVAR (REACTIVE KILOVOLT AMPERE)
KW	KILOWATT
KWH	KILOWATT-HOUR
LDP	LOAD REACTOR
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LPU	LINE PROTECTION UNIT
LNR	LINE REACTOR
LT	LIGHT
M	MAGNETIC CONTACTOR
mA	MILLIAMPERES
MCP	MOTOR CURRENT PROTECTOR – MAGNETIC ONLY CIRCUIT BREAKER
MEG	MEGOHM
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
mV	MILLIVOLT
MW	MEGAWATT
N	NEUTRAL CONDUCTOR
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
NESC	NATIONAL ELECTRICAL SAFETY CODE
OCP	OVERCURRENT PROTECTOR
OL	OVERLOAD
OLD	ONE LINE DIAGRAM
P	POLE
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
POT	POTENTIOMETER
PRMC	PVC COATED RIGID METALLIC (STEEL) CONDUIT
PS	POWER SUPPLY
PUD	PUBLIC UTILITY DISTRICT
PVC	POLYVINYL CHLORIDE
RMC	RIGID METAL (STEEL) CONDUIT
RNC	RIGID NON-METALLIC CONDUIT
RPM	REVOLUTIONS PER MINUTE
RS485	SERIAL RS485 CABLE
RTRC	REINFORCED THERMOSETTING RESIN CONDUIT
SC5	SHIELDED CAT 5e CABLE
SEC	SECOND
SHL'D	SHIELDED
SPD	SURGE PROTECTIVE DEVICE
SS	SELECTOR SWITCH
STP	SHIELDED TWISTED PAIR
SUSE	SUITABLE FOR USE AS SERVICE ENTRANCE
TB	TERMINAL BLOCK
TEFC	TOTALLY ENCLOSED FAN COOLED
TENV	TOTALLY ENCLOSED NON-VENTILATED
TR	TIMING RELAY
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
VA	VOLT AMPERE
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VPN	VIRTUAL PRIVATE NETWORK
VR	VOLTAGE MONITORING RELAY
W	WATT
WAN	WIDE AREA NETWORK
WH	WATT HOUR
WP	WEATHER PROOF
XFMR	TRANSFORMER

ELECTRICAL GENERAL NOTES

G01 IN GENERAL, DEVICES SHOWN ON THE ELECTRICAL DRAWINGS IN BACKGROUND (GRAY OR SCREENED) REPRESENT ONE OF THE FOLLOWING UNLESS NOTED OTHERWISE ON AN INDIVIDUAL SHEET:

- STRUCTURAL OR ARCHITECTURAL BUILDING STRUCTURES SUCH AS WALLS, DOORS, STAIRS, ETC. AND STRUCTURAL FRAMING MEMBERS.
- MECHANICAL EQUIPMENT OR DEVICES SUCH AS HVAC UNITS AND PROCESS EQUIPMENT WHICH ARE SHOWN ON THE MECHANICAL DRAWINGS AND ARE SHOWN IN BACKGROUND (GRAY OR SCREENED) ON THE ELECTRICAL DRAWINGS TO ASSIST IN DETERMINING THE LOCATION OF THE EQUIPMENT, CONNECTIONS AND DEVICES.
- DISTRIBUTION EQUIPMENT SHOWN ON ELECTRICAL PLAN DRAWINGS (SUCH AS LIGHTING PLANS) IS SHOWN IN BACKGROUND (GRAY OR SCREENED) IN ORDER TO CLARIFY OTHER ELECTRICAL DEVICES AND CIRCUITS SHOWN ON THAT SHEET.
- EQUIPMENT OR DEVICES THAT ARE EXISTING TO REMAIN (AND TO BE PRESERVED AND PROTECTED) WHERE SHOWN ON REVISED/MODIFICATIONS ELECTRICAL SHEETS.

G02 THE EXISTING FUNCTIONS OF THE TREATMENT PLANT ARE TO REMAIN IN OPERATION AT ALL TIMES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE PRESERVATION OF EXISTING ELECTRICAL, INSTRUMENTATION, CONTROL, SIGNALING, COMMUNICATIONS AND ALARM EQUIPMENT, CIRCUITS AND DEVICES WITH ALL OTHER ASPECTS OF THE CONSTRUCTION PROCESS, TO ENSURE THAT ALL EXISTING EQUIPMENT, CIRCUITS AND DEVICES REMAIN IN OPERATION DURING THE COURSE OF CONSTRUCTION. FOR ITEMS THAT ARE SHOWN TO BE DEMOLISHED, THEY SHALL REMAIN IN OPERATION UNTIL NO LONGER REQUIRED FOR THE OPERATION OF THE PLANT.

G03 THE DRAWINGS ARE NOT INTENDED TO SHOW ALL OF THE EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND REVIEW EXISTING CONDITIONS PRIOR TO BIDDING. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN TO THE EXTENT IT WILL IMPACT THE COST OF THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING A MINIMUM OF 10 DAYS PRIOR TO BIDDING.

G04 THERE ARE EXISTING AND NEW PROCESS PIPING AND EQUIPMENT INSTALLED/TO BE INSTALLED ON THIS SITE. THE CONTRACTOR SHALL COORDINATE NEW CONDUIT AND CIRCUIT ROUTING AND ELEVATIONS WITH EXISTING EQUIPMENT, PIPING, AND OTHER CONSTRUCTION ACTIVITIES PRIOR TO INSTALLATION. LOCATE EXISTING UNDERGROUND FACILITIES, PRESERVE AND PROTECT THEM DURING CONSTRUCTION AND ROUTE NEW CONDUITS TO AVOID CONFLICTS BY INSTALLING AT DIFFERENT LEVELS OR WHEN APPROVED BY THE ENGINEER, DIFFERENT ROUTING.

G05 EXISTING EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE IMMEDIATELY REPLACED WITH NEW EQUIPMENT, MATERIALS, DEVICES AND CIRCUITS OF LIKE MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

G06 WIRING METHODS, MATERIALS AND EQUIPMENT IN THIS AREA SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE FOR CLASS I, DIVISION 1 HAZARDOUS (CLASSIFIED) LOCATIONS. REFER TO THE HAZARDOUS AREA CLASSIFICATIONS LETTER IN THE SPECIFICATIONS APPENDIX FOR FURTHER INFORMATION.

G07 WIRING METHODS, MATERIALS AND EQUIPMENT IN THIS AREA SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE FOR CLASS I, DIVISION 2 HAZARDOUS (CLASSIFIED) LOCATIONS. REFER TO THE HAZARDOUS AREA CLASSIFICATIONS LETTER IN THE SPECIFICATIONS APPENDIX FOR FURTHER INFORMATION.

G08 COORDINATE CONDUIT STUB UP LOCATIONS WITH APPROVED EQUIPMENT SHOP DRAWING SUBMITTALS PRIOR TO LOCATING CONDUIT STUB UPS IN THE SLAB. LOCATE CONDUIT STUB UPS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.

ELECTRICAL GENERAL NOTES FOR ELEMENTARY WIRING DIAGRAMS

W01 THE WIRING DIAGRAM FOR THE VARIABLE FREQUENCY DRIVE IS BASED ON AN ALTIVAR 61 / 71. PROVIDE EQUIVALENT WIRING AS REQUIRED. NOTE THAT THE SPEED REFERENCE SHALL BE FROM THE POTENTIOMETER WHEN THE SELECTOR SWITCH IS IN "HAND". THE SPEED REFERENCE SHALL BE FROM THE FIELDBUS WHEN THE SELECTOR SWITCH IS IN "AUTO".

W02 THE WIRING DIAGRAM FOR THE OVERLOAD IS BASED ON A TESYS T. PROVIDE EQUIVALENT WIRING AS REQUIRED.

W03 FIELDBUS SHALL BE CONNECTED VIA ETHERNET. (ETHERNET CABLING IN MOTOR CONTROL CENTERS SHALL HAVE INSULATION RATED FOR 600 VOLTS.)

W04 WIRING DIAGRAM SHALL BE EQUIVALENT TO THAT SHOWN ABOVE EXCEPT THE PLACEHOLDERS (DESIGNATED AS "XX" OR "X") IN REFERENCES AND LABELS SHALL BE UPDATED TO MATCH THE EQUIPMENT TAG ID. FOR EXAMPLE, THE LABEL "RWSCP-RPXN" SHALL BE "RWSCP-RP1N" FOR EQUIPMENT TAG ID "03 RP 01" AND THE RUNG LABEL "XXMXRXX-1" SHALL BE "06MXR01-1" FOR EQUIPMENT TAG ID "06 MXR 01". FOR THIS PROJECT, WHERE WIRING DIAGRAMS REQUIRE MODIFICATIONS SO EQUIPMENT WHOSE BEHAVIOR DOES NOT EXACTLY MATCH THE WIRING DIAGRAMS AS SHOWN WILL HAVE EQUIVALENT FUNCTIONALITY, WIRING DIAGRAMS GROUPED UNDER A SINGLE REFERENCE (SUCH AS E.W.D. 1/E-17) SHALL BE IDENTICAL.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

DATE: OCT 2021
DRAWN: MLO
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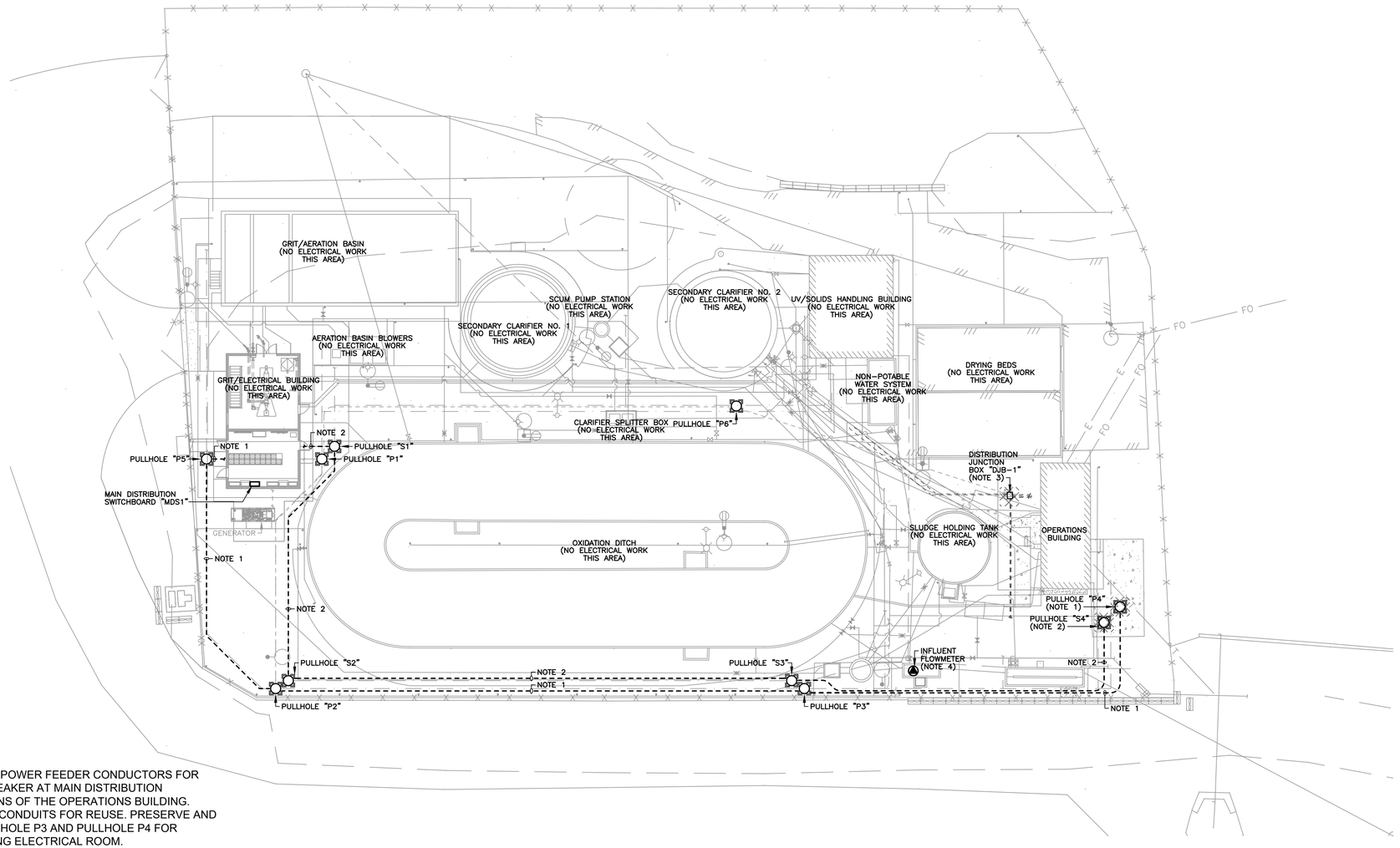
APPROVED: MLO

No.	REVISION	DATE	APP'D

MATTHEW L. OBERG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
ELECTRICAL GENERAL NOTES AND SYMBOL SCHEDULES

SHEET: E-1
OF: 13
JOB NO.: 20859
DWG: C-00E-01



EXISTING/DEMOLITION ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. DEMOLISH PULLHOLE P4. DEMOLISH POWER FEEDER CONDUCTORS FOR PANEL OBHA FROM THE CIRCUIT BREAKER AT MAIN DISTRIBUTION SWITCHBOARD MDS1 TO THE REMAINS OF THE OPERATIONS BUILDING. PRESERVE AND PROTECT EXISTING CONDUITS FOR REUSE. PRESERVE AND PROTECT CONDUITS BETWEEN PULLHOLE P3 AND PULLHOLE P4 FOR EXTENSION TO OPERATIONS BUILDING ELECTRICAL ROOM.

2. DEMOLISH PULLHOLE S4. DEMOLISH FIBER CABLE BETWEEN GRIT BUILDING AND THE REMAINS OF THE OPERATIONS BUILDING. PRESERVE AND PROTECT EXISTING CONDUITS FOR REUSE. PRESERVE AND PROTECT CONDUITS BETWEEN PULLHOLE S3 AND PULLHOLE S4 FOR EXTENSION TO OPERATIONS BUILDING ELECTRICAL ROOM.

3. DEMOLISH DISTRIBUTION JUNCTION BOX. DEMOLISH SIGNAL CABLE BETWEEN SOLIDS HANDLING BUILDING AND INFLUENT FLOWMETER. THERE ARE OTHER CONDUCTORS IN THE DISTRIBUTION JUNCTION BOX WHICH ARE BELIEVED TO BE ABANDONED. IF THOSE CIRCUITS ARE NOT ABANDONED, REPAIR AND EXTEND CONDUCTORS AND CONDUITS WITH NEW MATERIALS AS NECESSARY FOR THOSE CIRCUITS TO REMAIN IN OPERATION.

4. PRESERVE AND PROTECT EXISTING ABOVE GRADE CONDUITS AT FLOWMETER STRUCTURE FOR REUSE.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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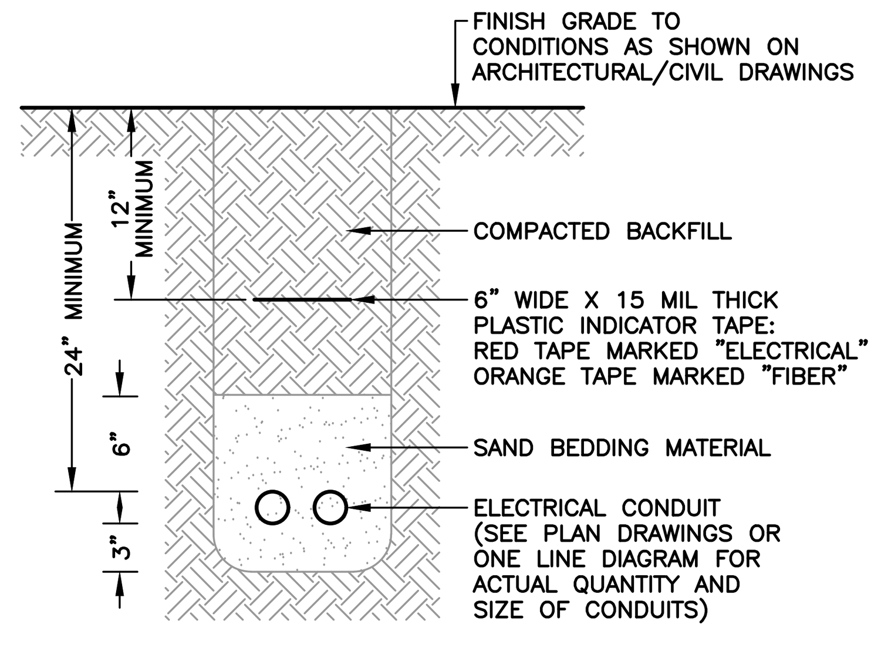
No.	REVISION	DATE	APPD

MATTHEW L. OBERG
STATE OF WASHINGTON
20859
REGISTERED PROFESSIONAL ENGINEER
10/8/2021

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
EXISTING/DEMOLITION ELECTRICAL SITE PLAN

SHEET: E-2
OF: 13
JOB NO.: 20859
DWG: C-00E-02

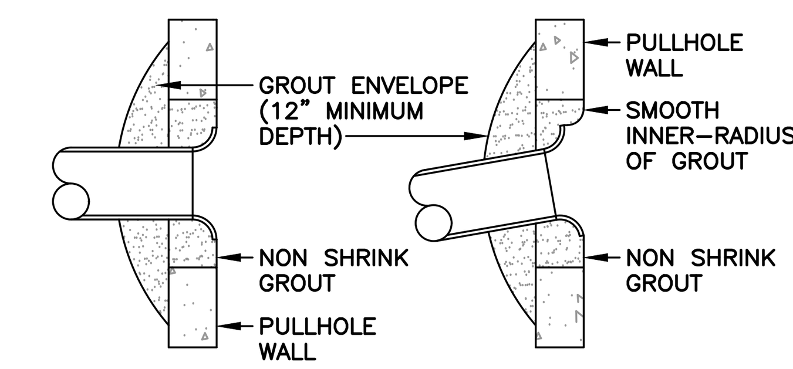
Z:\JOBS\G&OY\20859\Cad\C-00E-02.dwg, 10/8/2021 9:43 AM, THEODORE H. PALMATIER



NOTE: CONDUITS ARE SHOWN DIAGRAMMATICALLY. SEE PLAN DRAWINGS FOR ACTUAL CONDUIT QUANTITIES, DEPTH, SIZES AND ARRANGEMENTS.

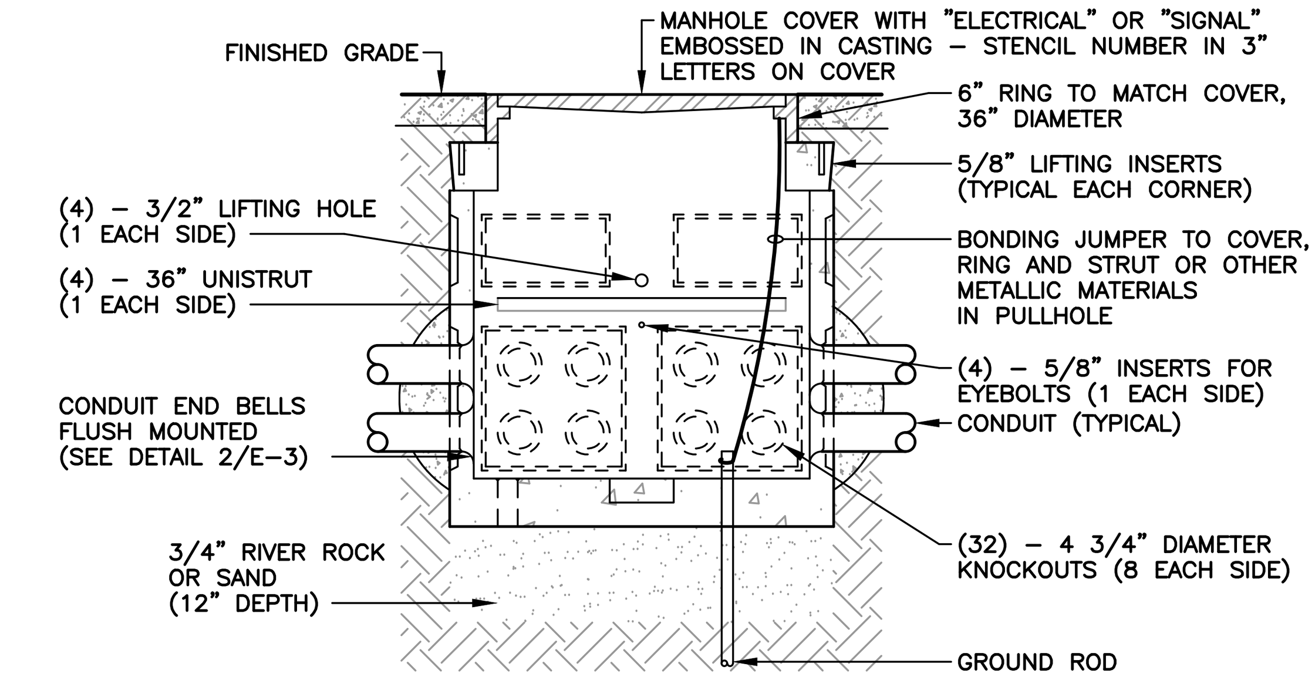
DETAIL 1/E-3
TRENCHING FOR ELECTRICAL CIRCUITS SECONDARY POWER OR SIGNAL CIRCUITS

SCALE: NONE



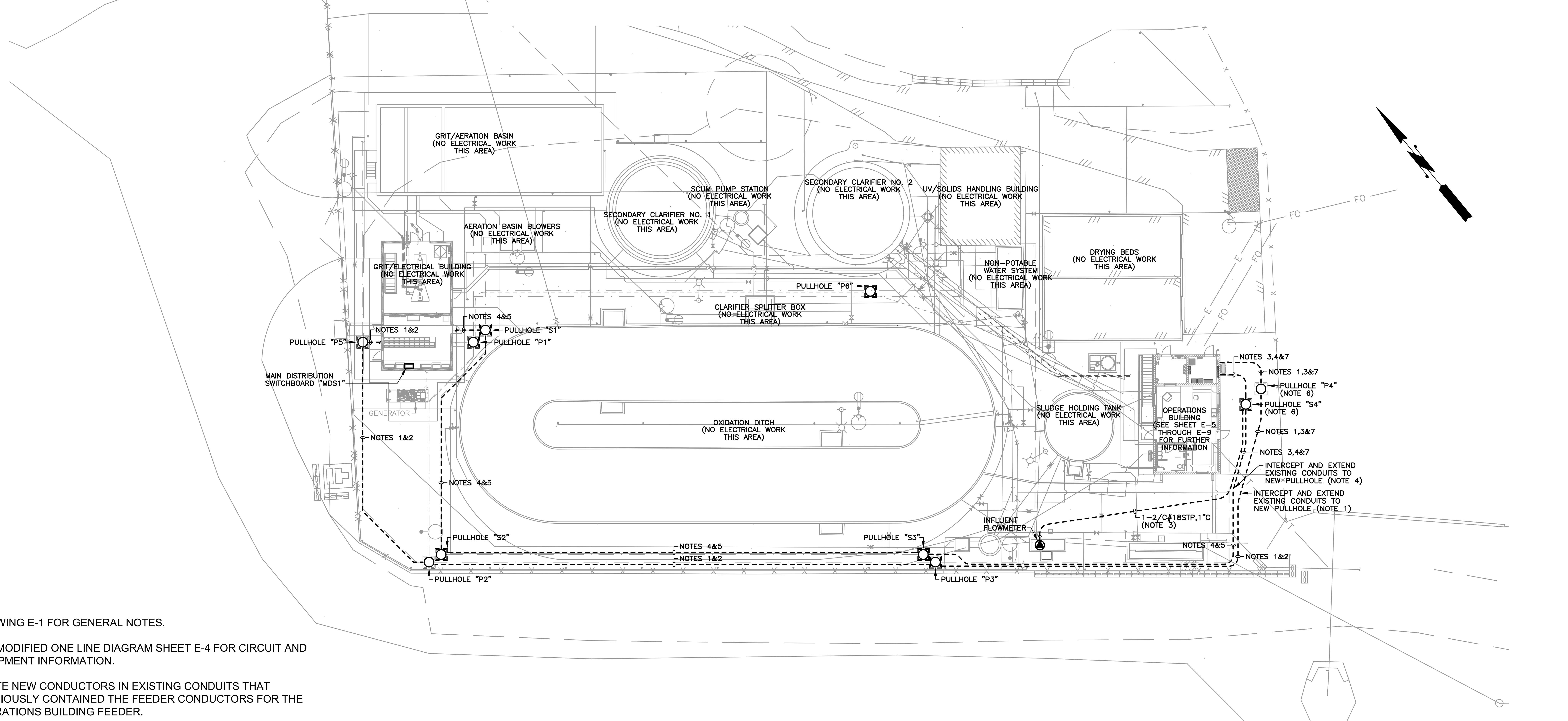
DETAIL 2/E-3
MAINTENANCE HOLE CONDUIT PENETRATIONS

SCALE: NONE



DETAIL 3/E-3
4'x4' POWER OR SIGNAL PULLHOLE

SCALE: NONE



MODIFIED ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. SEE MODIFIED ONE LINE DIAGRAM SHEET E-4 FOR CIRCUIT AND EQUIPMENT INFORMATION.
2. ROUTE NEW CONDUCTORS IN EXISTING CONDUITS THAT PREVIOUSLY CONTAINED THE FEEDER CONDUCTORS FOR THE OPERATIONS BUILDING FEEDER.
3. ROUTE NEW CONDUCTORS/CABLES IN NEW CONDUIT. SEE DETAIL 1/E-3 FOR TRENCHING INFORMATION.
4. SEE BLOCK DIAGRAM SHEET E-13 FOR FURTHER INFORMATION.
5. ROUTE NEW CABLE IN EXISTING CONDUITS THAT PREVIOUSLY CONTAINED THE COMMUNICATIONS CABLE FOR THE OPERATIONS BUILDING.
6. SEE PULLHOLE DETAIL 3/E-3. SEE PULLHOLE SCHEDULE AND BUTTERFLY DIAGRAM ON SHEET E-5.
7. THIS LINE REPRESENTS ROUTING OF MULTIPLE CIRCUITS. SEE PULLHOLE DETAILS SHEET E-5 FOR FURTHER INFORMATION.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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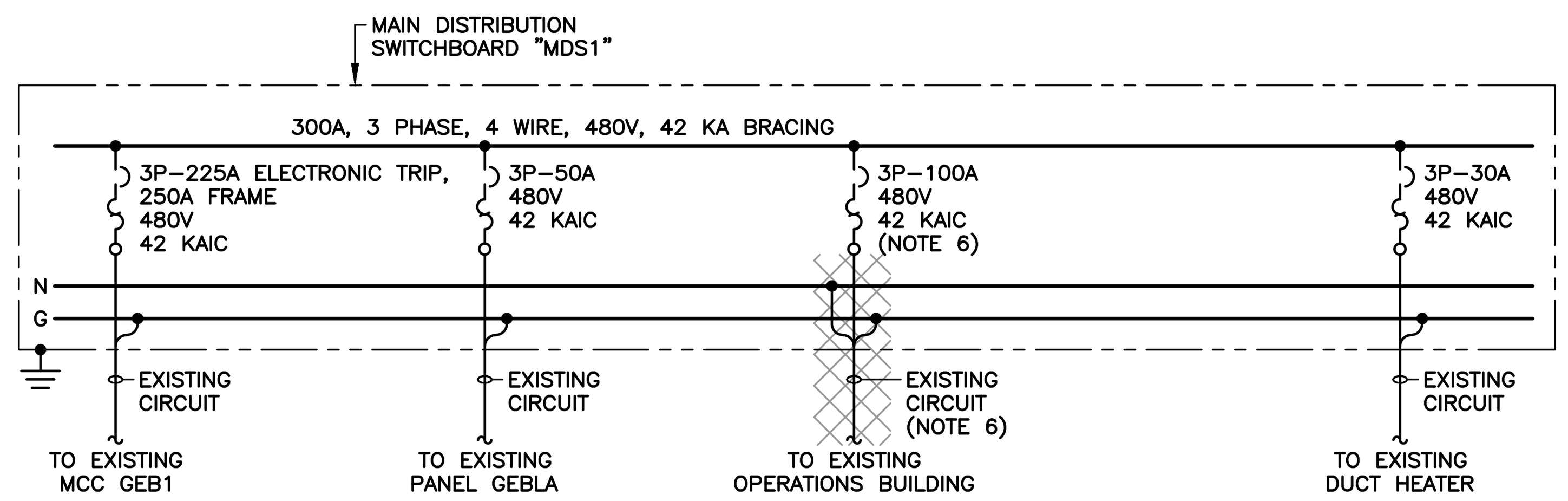
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
MODIFIED ELECTRICAL SITE PLAN AND DETAILS

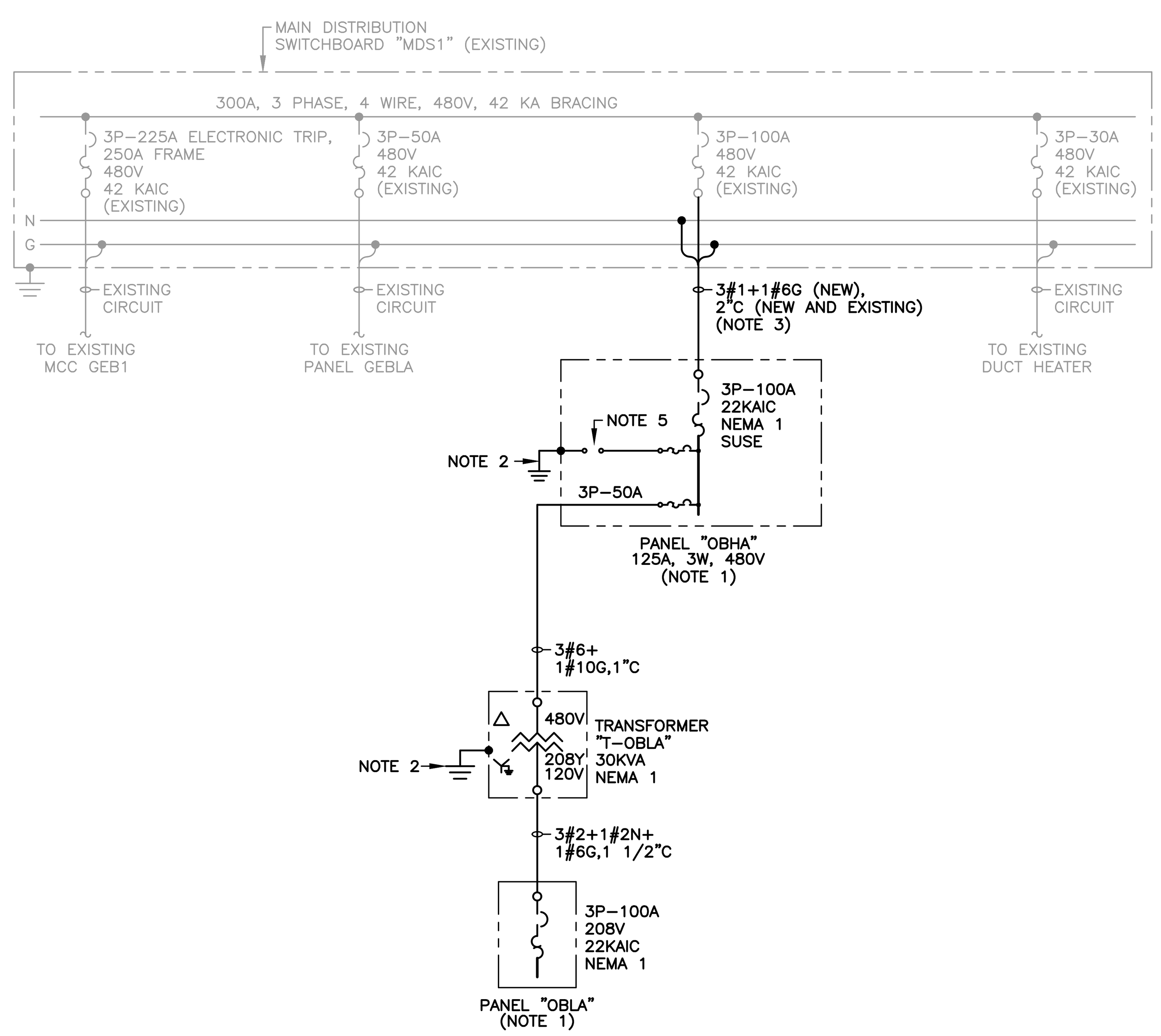
SHEET: E-3
OF: 13

JOB NO.: 20859
DWG: C-00E-03



EXISTING/DEMOLITION ONE LINE DIAGRAM OPERATIONS BUILDING

SCALE: NONE



MODIFIED ONE LINE DIAGRAM OPERATIONS BUILDING

SCALE: NONE
(NOTE 4)

PANELBOARD CIRCUIT SCHEDULE PANEL OBHA

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	UNIT HEATER 01 HT 02	3P–20A	1, 3, 5	2, 4, 6	3P–20A	UNIT HEATER 01 HT 03	2
7	WATER HEATER 01 WH 01	3P–20A	7, 9, 11	8, 10, 12	3P–20A	UNIT HEATER 01 HT 04	8
13	SPARE	3P–20A	13, 15, 17	14, 16, 18	3P–20A	UNIT HEATER 01 HT 05	14
19	EMERGENCY GAS SCRUBBER	3P–20A	19, 21, 23	20, 22, 24	3P–20A	SPARE	20
25	AIR GAP PUMP NO. 1 (01 BP 01)	3P–20A	25, 27, 29	26, 28, 30	3P–20A	AIR GAP PUMP NO. 2 (01 BP 02)	26
31	SLUDGE PUMP 01 WP 01	3P–20A	31, 33, 35	32, 34, 36	3P–20A	SLUDGE PUMP 01 WP 02	32
37	SPARE	3P–20A	37, 39, 41	38, 40, 42	3P–50A	TRANSFORMER T–OBLA	38

PANELBOARD CIRCUIT SCHEDULE PANEL OBLA

SECTION 1 OF 1

CKT. #	LOAD DESCRIPTION	BREAKER TYPE	POLE #	POLE #	BREAKER TYPE	LOAD DESCRIPTION	CKT. #
1	INTERIOR LIGHTING	1P–20A	1	2	1P–20A	EXTERIOR & ELECTRICAL ROOM RECEPTACLES	2
3	EXTERIOR LIGHTING	1P–20A	3	4	1P–20A	COMM BACKBOARD RECEPTACLES	4
5	FIRE ALARM CONTROL PANEL	1P–20A	5	6	1P–20A	EXTERIOR & LOCKER ROOM RECEPTACLES	6
7	OPERATIONS BUILDING CONTROL PANEL	1P–20A	7	8	1P–20A	LAB/OFFICE RECEPTACLES	8
9	HMI RECEPTACLE	1P–20A	9	10	1P–20A	CHLORINE GAS SENSOR/RECEIVER	10
11	DESK RECEPTACLES	1P–20A	11	12	1P–20A	CHLORINATION ROOM RECEPTACLES	12
13	DESK RECEPTACLES	1P–20A	13	14	1P–20A	BASEMENT & SLUDGE ROOM RECEPTACLES	14
15	OPERATOR INTERFACE	1P–20A	15	16	1P–20A	BASEMENT & SLUDGE ROOM RECEPTACLES	16
17	LAB COUNTER RECEPTACLES	1P–20A	17	18	1P–20A	SUMP PUMP	18
19	LAB COUNTER RECEPTACLES	1P–20A	19	20	1P–20A	CHLORINATION ROOM EXHAUST FAN	20
21	DISHWASHER	1P–20A	21	22	1P–20A	HOT WATER RECIRCULATION PUMP	22
23	LAB COUNTER RECEPTACLES	1P–20A	23	24	1P–20A	HOOD	24
25	LAB COUNTER RECEPTACLES	1P–20A	25	26	1P–20A	VACUUM PUMP	26
27	LAB REFRIGERATOR	1P–20A	27	28	2P–20A	WALL HEATER 01 HT 01	28
29	REFRIGERATOR	1P–20A	29	30			
31	AUTOCLAVE	1P–20A	31	32	1P–20A	SUPPLY FAN 01 SF 01	32
33	BOD INCUBATOR	1P–20A	33	34	1P–20A	EXHAUST FAN 01 EF 03	34
35	WATER BATH	1P–20A	35	36	2P–30A	HEAT PUMP 01 HP 01	36
37	DRYING OVEN	1P–20A	37	38			
39	MUFFLE FURNACE	2P–20A	39, 41	40, 42	2P–30A	SPARE	40
43	LAB COUNTER RECEPTACLES	1P–20A	43	44	2P–30A	HEAT PUMP 01 HP 02	44
45	LAB COUNTER RECEPTACLES	1P–20A	45	46			
47	SPARE	1P–20A	47	48	1P–20A	CHLORINE GAS SHUTOFF SYSTEM	48
49	SPARE	1P–20A	49	50	1P–20A	ALARM DIALER	50
51	SPARE	1P–20A	51	52	1P–20A	SPARE	52
53	SPARE	1P–20A	53	54	1P–20A	SPARE	54
55	SPARE	1P–20A	55	56	1P–20A	SPARE	56
57	SPARE	1P–20A	57	58	1P–20A	SPARE	58
59	SPARE	1P–20A	59	60	1P–20A	SPARE	60

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. SEE PANELBOARD CIRCUIT SCHEDULES THIS SHEET FOR BRANCH CIRCUIT INFORMATION.
2. SEE GROUNDING PLAN ON SHEET E-7 FOR GROUNDING INFORMATION.
3. ROUTE NEW CONDUCTORS THROUGH PULLHOLES P5, P2, P3, AND P4 TO OPERATIONS BUILDING.
4. DEVICES AND EQUIPMENT SHOWN ON ONE LINE DIAGRAM ARE NEW UNLESS OTHERWISE NOTED.
5. SIZE SPD CIRCUIT BREAKER PER SPD MANUFACTURER'S REQUIREMENTS. PROVIDE SPD DEVICE THAT DOES NOT USE ONE OF THE CIRCUIT BREAKER POSITIONS SHOWN IN THE PANELBOARD. SPD SHALL BE INSTALLED AS PART OF LISTED EQUIPMENT AND SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 242 OF THE NATIONAL ELECTRICAL CODE.
6. DEMOLISH EXISTING CONDUCTORS. PRESERVE AND PROTECT EXISTING CONDUITS, PULLHOLES, AND CIRCUIT BREAKER IN SWITCHBOARD FOR REUSE.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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YAKIMA, WA 98901 • (509) 453-4833

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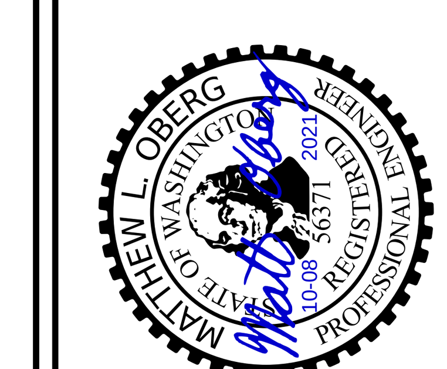

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
ONE LINE DIAGRAMS AND PANEL SCHEDULES

SHEET: E-4
OF: 13
JOB NO.: 20859
DWG: C-00E-04

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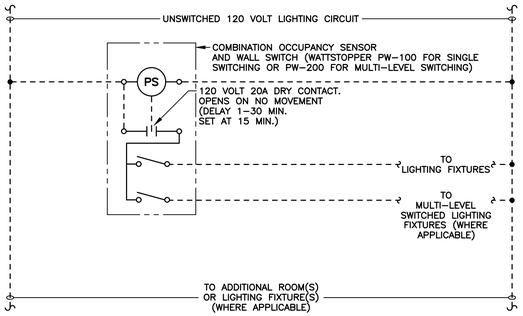
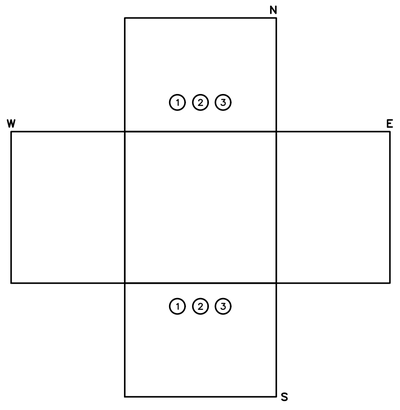


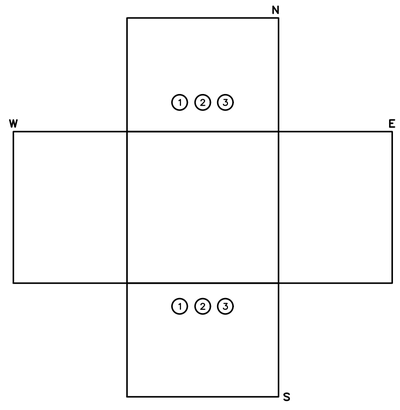
EWD 1/E-5
WALL OCCUPANCY SENSOR LIGHTING CONTROL
SCALE: NONE

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER NAME	MANUFACTURER CATALOG NO.	QTY	VA	COLOR TEMP	LUMENS	REMARKS
A1	LED, COMMERCIAL, 2' X 2', RECTANGULAR, RECESSED, FLANGE KIT, STEEL HOUSING, 90 CRI, INSULATION CONTACT, PRISMATIC ACRYLIC PATTERN 12 LENS, PAINT AFTER FABRICATION, FUSING, 80 CRI, 120 VOLT, 5 YEAR WARRANTY	LITHONIA METALUX	2GTL-F-2-20L-120-GZ10-LP840-GLR-PAF 22-G-R-LD5-20-F1-120V-GL-L840-CD-1-PAF	1	18	LED 4000K	2300	PROVIDE EMERGENCY BATTERY FOR FIXTURES WITH 'EM' DESIGNATION
A2	LED, COMMERCIAL, 2' X 4', RECTANGULAR, RECESSED, FLANGE KIT, STEEL HOUSING, 90 CRI, INSULATION CONTACT, PRISMATIC ACRYLIC PATTERN 12 LENS, PAINT AFTER FABRICATION, FUSING, 80 CRI, 120 VOLT, 5 YEAR WARRANTY	LITHONIA METALUX	2GTL-F-4-40L-120-GZ10-LP840-GLR-PAF 24-G-R-LD5-42-F1-120V-GL-L840-CD-1-PAF	1	30	LED 4000K	4000	PROVIDE EMERGENCY BATTERY FOR FIXTURES WITH 'EM' DESIGNATION
A3	LED, COMMERCIAL, 2' X 2', RECTANGULAR, RECESSED, FLANGE KIT, STEEL HOUSING, 90 CRI, INSULATION CONTACT, PRISMATIC ACRYLIC PATTERN 12 LENS, PAINT AFTER FABRICATION, FUSING, 80 CRI, 120 VOLT, 5 YEAR WARRANTY	LITHONIA METALUX	2GTL-F-2-33L-120-GZ10-LP840-GLR-PAF 22-G-R-LD5-36-F1-120V-GL-L840-CD-1-PAF	1	29	LED 4000K	3400	PROVIDE EMERGENCY BATTERY FOR FIXTURES WITH 'EM' DESIGNATION
G	LED, 4' LONG, SURFACE MOUNT OR CHAIN HANG, ENCLOSED AND GASKETED, ONE PIECE HOUSING, 0-10 VOLT DIMMING, MOLDED FIBERGLASS REINFORCED POLYESTER BODY, END ENTRY HUBS, IMPACT RESISTANT POLYCARBONATE DIFFUSER, STAINLESS STEEL LATCHES, FUSING, WET LABEL, 80 CRI, 120 VOLT, 5 YEAR WARRANTY	METALUX DAYBRITE	4VT2-LD5-8-DR-UNV-L840-CD1-WL-SSL-GL V2-W-P-E-70L-840-4-UNV-GLR	1	65	LED 4000K	6900	PROVIDE EMERGENCY BATTERY FOR FIXTURES WITH 'EM' DESIGNATION
W	LED, COMMERCIAL, RECESSED, FLANGE KIT, 1' x 2', WET LOCATION, EXTRUDED ALUMINUM HOUSING, WHITE BAKED ENAMEL FINISH, LENS AND GRID GASKET, 0.125" ACRYLIC LENS, IP66 RATED, INSULATION CONTACT, 120 VOLT, 5 YEAR WARRANTY	FAIL-SAFE	EN-W-12-2-LD2-27-40-CA125-120-EDC1-GSK/GRD-DFCL	1	24	LED 4000K	2800	PROVIDE EMERGENCY BATTERY FOR FIXTURES WITH 'EM' DESIGNATION
CC	LED, ROUNDED TOP WALL SCONCE, SEALED DIE CAST ALUMINUM HOUSING, TEMPERED GLASS LENS, TYPE II, FUSING, 120 VOLT, PHOTOCELL, 5 YEAR WARRANTY	GARDCO McCRAW-EDISON	121-16L-700-NW-G4-2-120-PCB-F1-BZ IST-SA1-C-740-1-T2-BZ-BPC	1	38	LED 4000K	4546	
DD	LED, ROUNDED TOP WALL SCONCE, SEALED DIE CAST ALUMINUM HOUSING, AUTO-PROFILE DIMMING 50%, TEMPERED GLASS LENS, INFRARED PERSONNELL SENSING, TYPE III DISTRIBUTION, FUSING, 120 VOLT, PHOTOCELL, 5 YEAR WARRANTY	GARDCO McCRAW-EDISON	121-16L-700-NW-G4-3-120-CS50-IMRI2-PCB-F1-BZ IST-SA1-C-740-1-T3-BZ-ADH255-MS/DIM-LXX	1	38	LED 4000K	4206	



BUTTERFLY DIAGRAM
PULLHOLE "P4"
SCALE: NONE



BUTTERFLY DIAGRAM
PULLHOLE "S4"
SCALE: NONE

PULLHOLE P4				
CONDUIT NUMBER	CONDUIT NAME	CONDUIT DESTINATION	CONDUCTORS	CONDUIT SIZE
N1	PANEL OBHA FEEDER	OPERATIONS BUILDING	NOTE 1	NOTE 1
N2	SPARE	OPERATIONS BUILDING	--	1"
N3	SPARE	OPERATIONS BUILDING	--	2"
S1	PANEL OBHA FEEDER	PULLHOLE P3	NOTE 1	NOTE 1
S2	SPARE	PULLHOLE P3	--	1"
S3	SPARE	PULLHOLE P3	--	2"

PULLHOLE S4				
CONDUIT NUMBER	CONDUIT NAME	CONDUIT DESTINATION	CONDUCTORS	CONDUIT SIZE
N1	INFLUENT FLOWMETER	OPERATIONS BUILDING	1-2/C#18STP	1"
N2	OPERATIONS BUILDING FIBER	OPERATIONS BUILDING	1-6 STRAND FIBER	2"
N3	SPARE	OPERATIONS BUILDING	--	2"
S1	INFLUENT FLOWMETER	PULLHOLE S3	1-2/C#18STP	1"
S2	OPERATIONS BUILDING FIBER	PULLHOLE S3	1-6 STRAND FIBER	2"
S3	SPARE	PULLHOLE S3	--	2"

NOTES:

SEE SHEET E-1 FOR GENERAL NOTES.

1. SEE MODIFIED ONE LINE DIAGRAM SHEET E-4 FOR CIRCUIT AND EQUIPMENT INFORMATION.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

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No.	REVISION	DATE	APPD

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
LIGHTING SCHEDULES AND DIAGRAMS AND PULLHOLE BUTTERFLIES

SHEET: E-5
OF: 13
JOB NO.: 20859
DWG: C-00E-05

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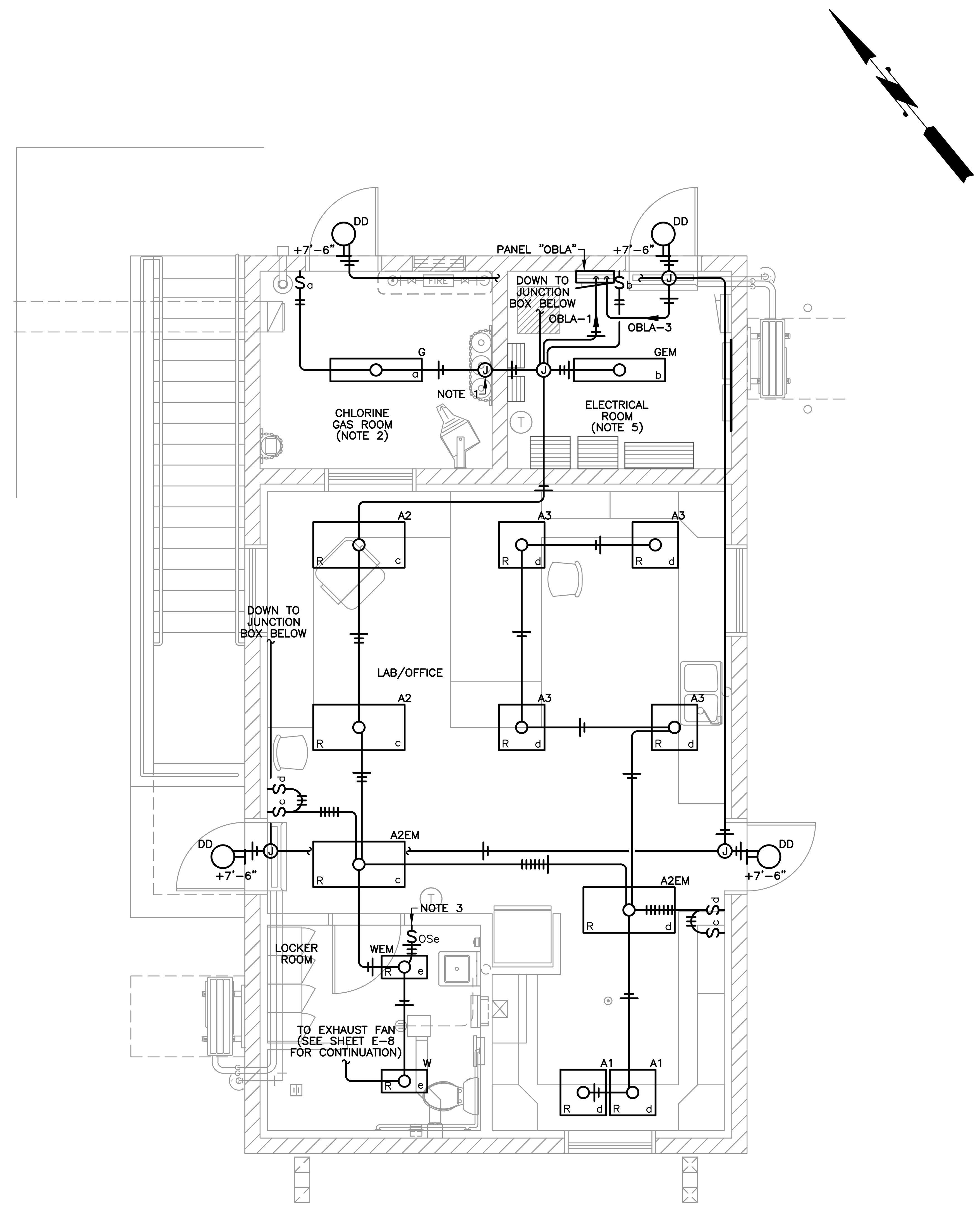
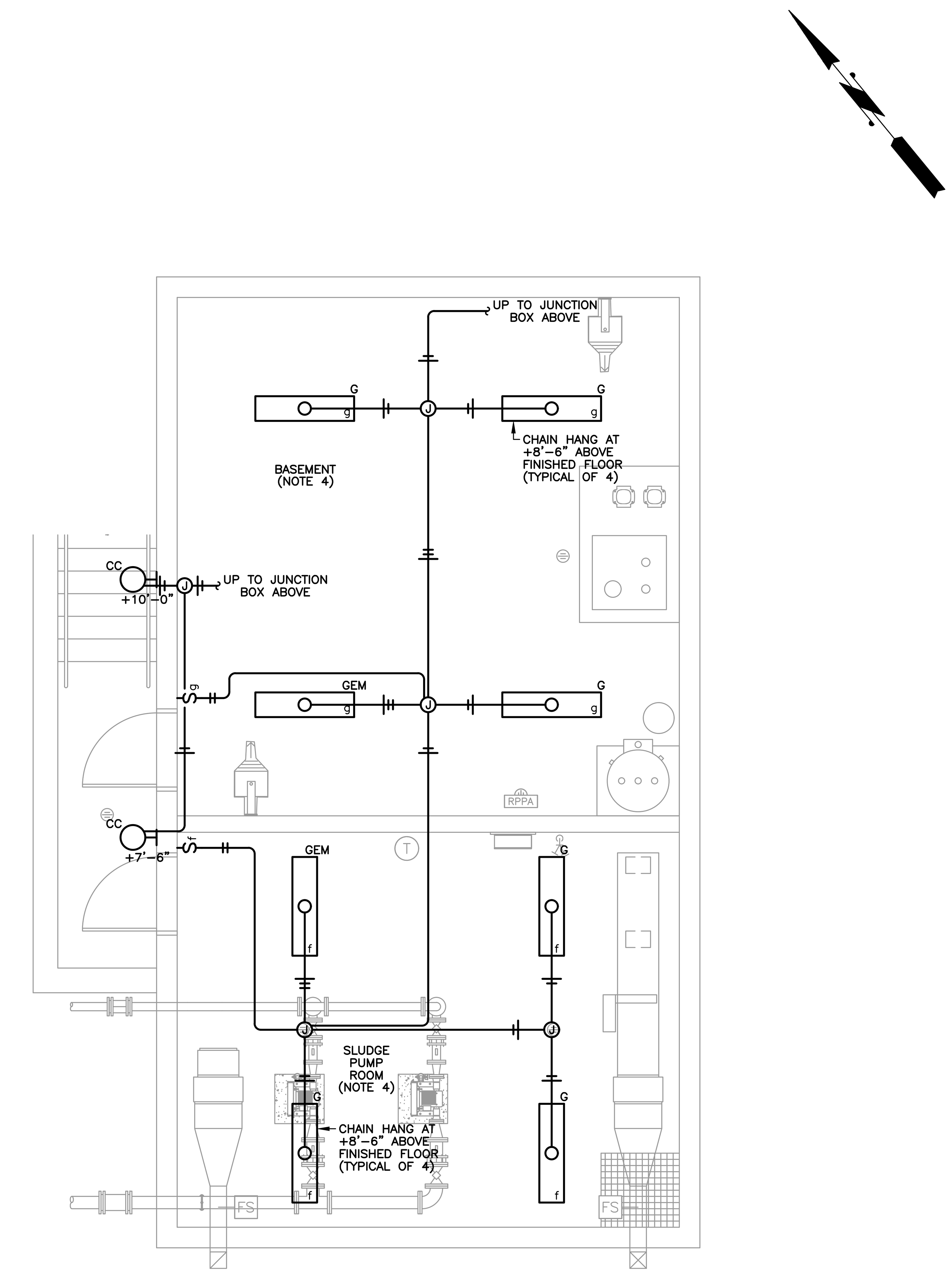


LIGHTING PLAN
OPERATIONS BUILDING - UPPER FLOOR
SCALE: 1/4" = 1'-0"



LIGHTING PLAN
OPERATIONS BUILDING - BASEMENT
SCALE: 1/4" = 1'-0"

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. PROVIDE SEALING COMPOUND (DUCT SEAL, ETC.) IN JUNCTION BOX AND ANNULAR SPACE AROUND CONDUIT PENETRATION TO PREVENT PASSAGE OF GAS FROM CHLORINATION ROOM. IT IS NOT ACCEPTABLE TO INSTALL ELECTRICAL DEVICES IN JUNCTION BOXES THAT HAVE SEALING COMPOUNDS INSTALLED. ELECTRICAL DEVICES MUST BE INSTALLED IN DEVICE BOXES THAT ARE SEPARATE FROM JUNCTION BOXES USED FOR INSTALLATION OF SEALING COMPOUNDS.

2. LIGHT SWITCHES SHALL BE INSTALLED EXPOSED ON WALL. LIGHTING FIXTURES SHALL BE INSTALLED SURFACE MOUNTED ON THE CEILING. LIGHTING CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILING. ROUTE CONDUITS EXPOSED VERTICALLY FROM THE CEILING DOWN TO THE DEVICES OR EQUIPMENT MOUNTED ON THE WALLS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.

3. WALL OCCUPANCY SENSOR. SEE EWD 1/E-5 FOR FURTHER INFORMATION REGARDING SENSOR CONNECTION REQUIREMENTS.

4. LIGHT SWITCHES SHALL BE INSTALLED EXPOSED ON WALL IN THIS ROOM. LIGHTING CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILINGS.

5. LIGHT SWITCHES SHALL BE INSTALLED CONCEALED IN WALL. LIGHTING CIRCUITS SHALL BE INSTALLED EXPOSED ON CEILING AND CONCEALED IN WALLS.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

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APPROVED: MLO

No.	REVISION	DATE	APP'D

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
LIGHTING PLANS

SHEET: E-6
OF: 13
JOB NO.: 20859
DWG: C-00E-06

Z:\JOBS\G&O\20859\Cad\C-00E-06.dwg, 10/8/2021 9:43 AM, THEODORE H. PALMATIER

NOTES:

SEE SHEET E-1 FOR GENERAL NOTES.

1. PROVIDE SEALING COMPOUND (DUCT SEAL, ETC.) IN JUNCTION BOX AND ANNULAR SPACE AROUND CONDUIT PENETRATION TO PREVENT PASSAGE OF GAS FROM CHLORINATION ROOM. IT IS NOT ACCEPTABLE TO INSTALL ELECTRICAL DEVICES IN JUNCTION BOXES THAT HAVE SEALING COMPOUNDS INSTALLED. ELECTRICAL DEVICES MUST BE INSTALLED IN DEVICE BOXES THAT ARE SEPARATE FROM JUNCTION BOXES USED FOR INSTALLATION OF SEALING COMPOUNDS.

2. SEE DETAIL 1/E-3 FOR TRENCHING REQUIREMENTS.

3. PROVIDE #4 BARE COPPER GROUNDING ELECTRODE IN BUILDING FOOTING AS SHOWN ON THE PLANS. PROVIDE 3/4" X 10' COPPER CLAD GROUND RODS CONNECTED TO ELECTRODE AS SHOWN ON PLANS. PROVIDE COPPER GROUNDING ELECTRODE CONDUCTOR CONNECTIONS TO EQUIPMENT AS FOLLOWS:

TRANSFORMER T-OBLA SECONDARY	#6
PANEL OBHA	#6
BUILDING WATER PIPING	#6
BUILDING STRUCTURAL STEEL	#6
OPERATIONS BUILDING CONTROL PANEL	#10
TELECOMMUNICATIONS BUSBAR	#6

EXOTHERMICALLY WELD ALL CONNECTIONS. ALL CONDUCTORS NOT CONCEALED SHALL BE RUN IN RMC. BOND CONDUIT ENDS PER CODE.

4. PROVIDE SINGLE GANG, DOUBLE FACE PEDESTAL FIXTURE MANUFACTURED BY WATERSAVER FAUCET, MODEL E400WS OR EQUAL.

5. SEE MODIFIED ONE LINE DIAGRAM SHEET E-4 FOR CIRCUIT AND EQUIPMENT INFORMATION.

6. PROVIDE RECEPTACLE OR EQUIPMENT CONNECTION RECOMMENDED BY MANUFACTURER OF ACTUAL UNIT PROVIDED.

7. RECEPTACLES SHALL BE INSTALLED EXPOSED ON WALL. POWER CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILING. ROUTE CONDUITS EXPOSED VERTICALLY FROM THE CEILING DOWN TO THE DEVICES OR EQUIPMENT MOUNTED ON THE WALLS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.

8. PROVIDE THREE 1" CONDUITS FOR FUTURE CIRCUITS. EXTEND EACH CONDUIT 6" INTO BASEMENT. CAP AND MARK EACH CONDUIT THREE FEET OUTSIDE OF THE BUILDING.

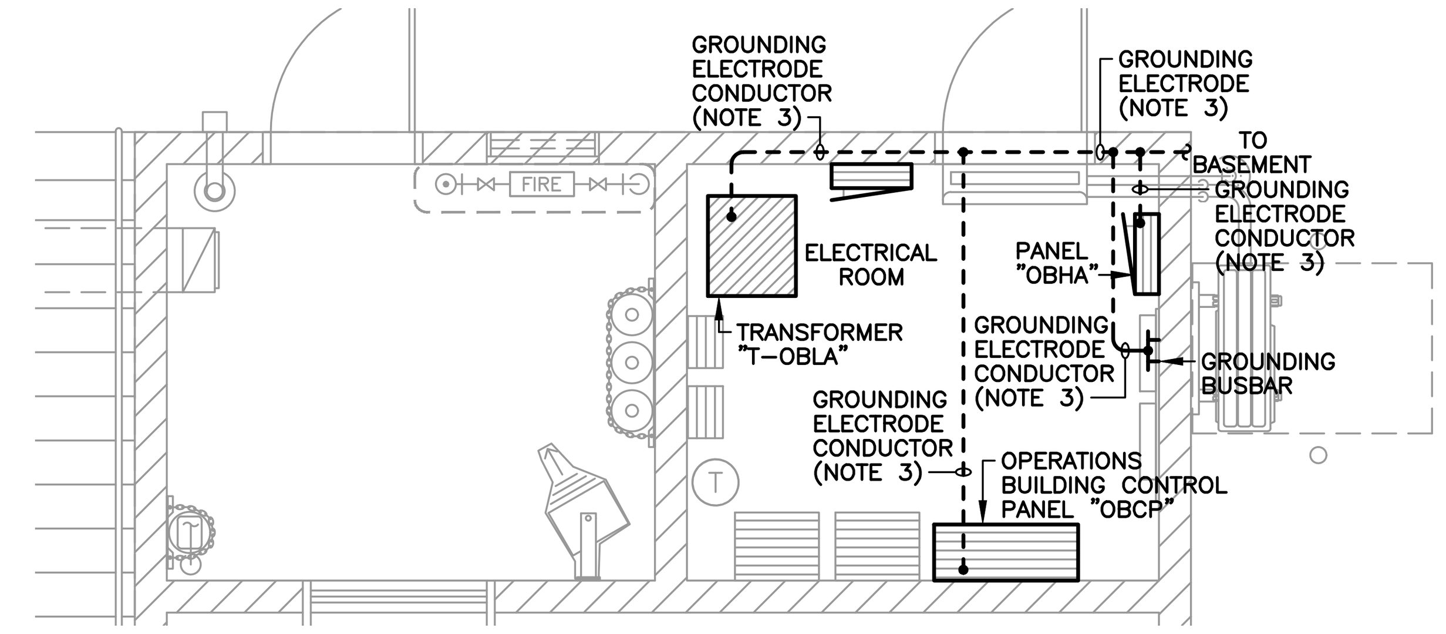
9. PROVIDE 1" CONDUIT FOR FUTURE CIRCUITS. EXTEND CONDUIT 6" INTO BASEMENT. CAP CONDUIT THREE INCHES ABOVE FINISHED FLOOR.

10. RECEPTACLES AND EQUIPMENT SHALL BE INSTALLED EXPOSED ON WALL IN THIS ROOM. RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILINGS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.

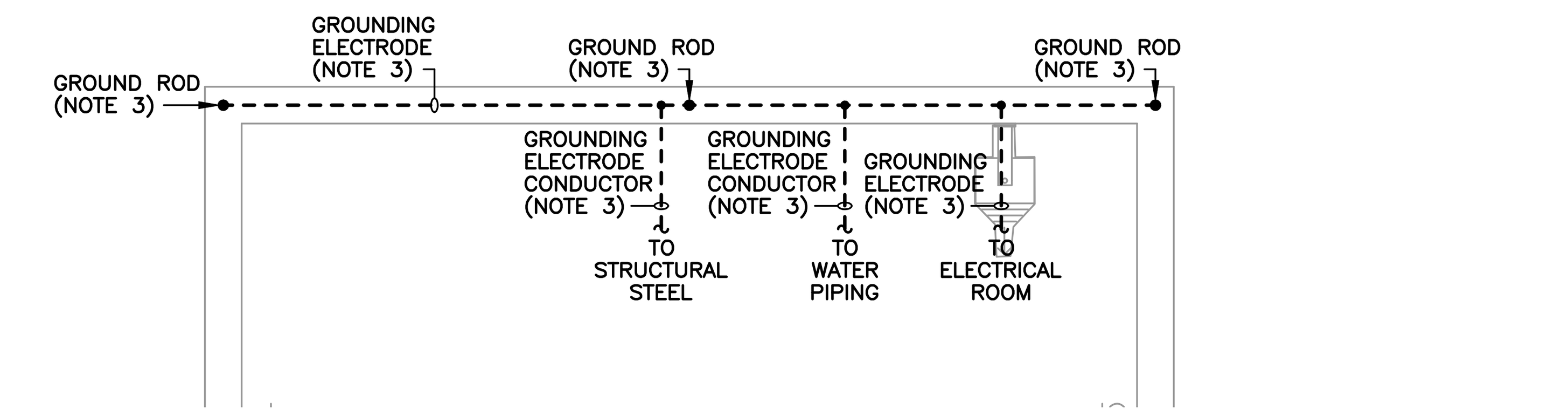
11. RECEPTACLES SHALL BE INSTALLED CONCEALED IN WALL. RECEPTACLE CIRCUITS SHALL BE INSTALLED CONCEALED IN WALLS.

12. ROUTE CIRCUITS CENCEALED IN CASEWORK. COORDINATE DEVICE LOCATION AND CONDUIT ROUTING WITH CASEWORK SHOP DRAWINGS.

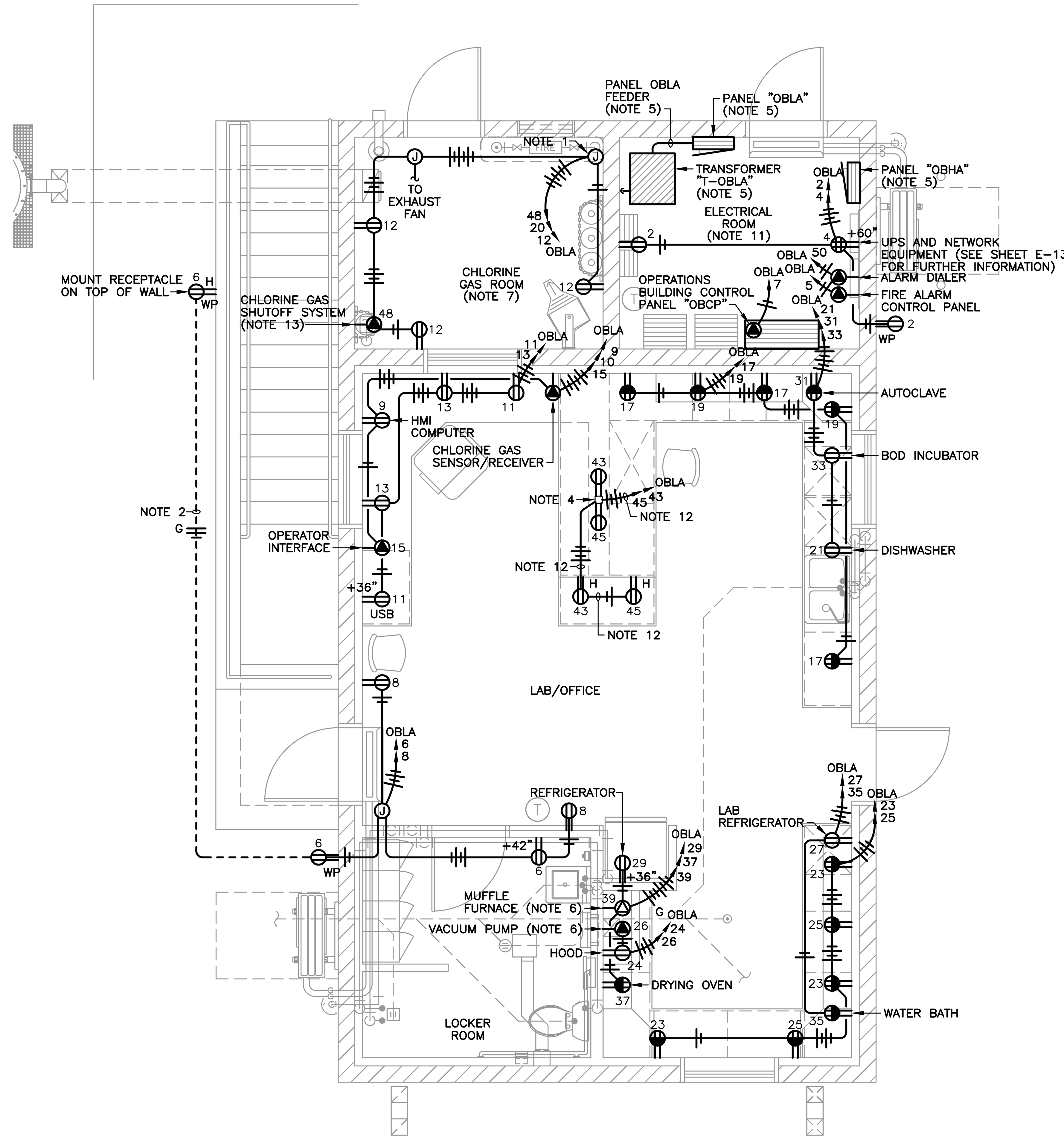
13. INSTALL ELECTRICAL COMPONENTS OF CHLORINE GAS SHUTOFF SYSTEM PER MANUFACTURER'S REQUIREMENTS. PROVIDE ALL INTERCONNECTING WIRING AND CONNECTION TO DEVICES AND EQUIPMENT INCLUDING CONTROLLER, SHUTOFF SWITCH, AND ACTUATOR.



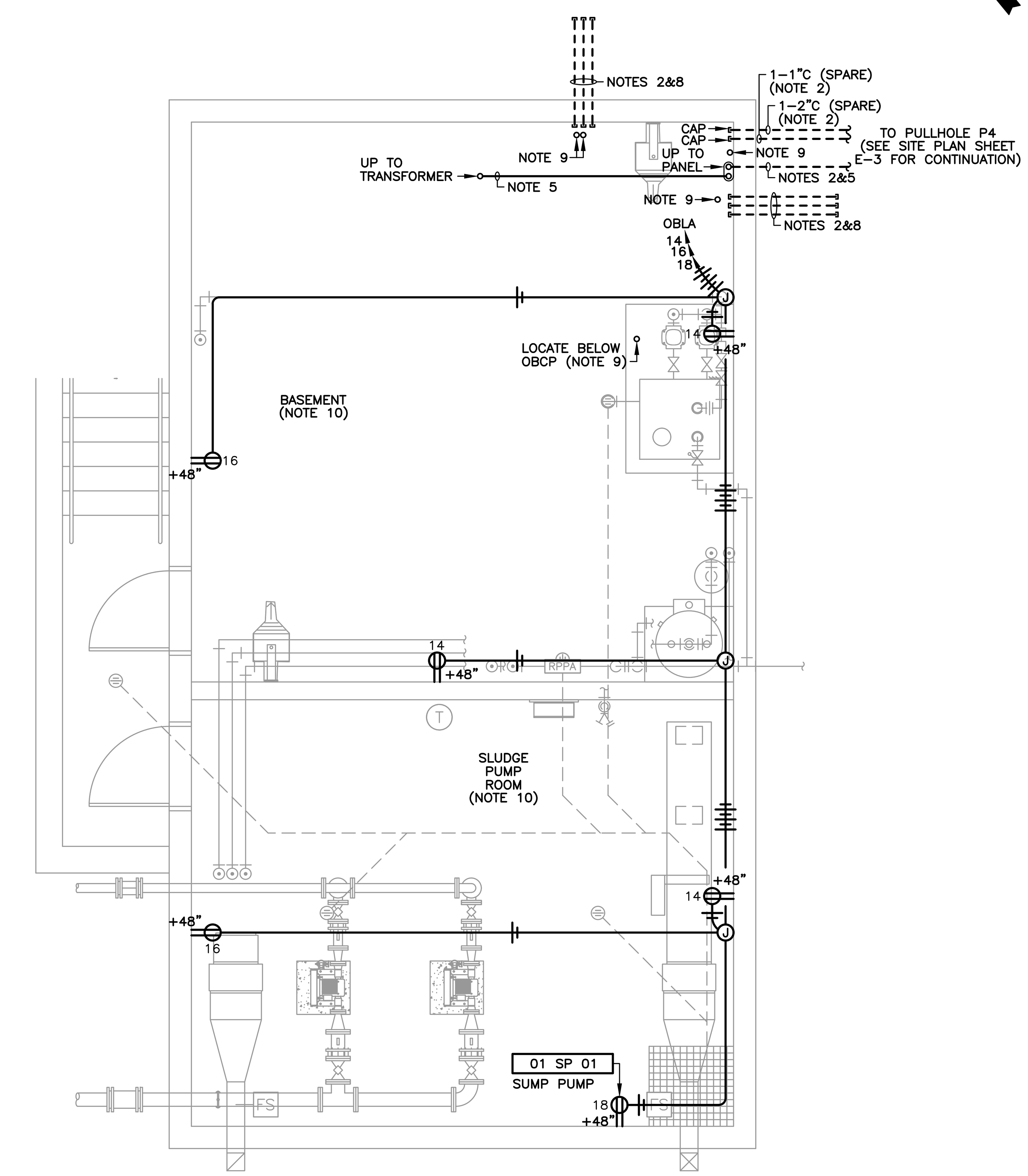
GROUNDING PLAN
OPERATIONS BUILDING - UPPER FLOOR
SCALE: 1/4" = 1'-0"



GROUNDING PLAN
OPERATIONS BUILDING - BASEMENT
SCALE: 1/4" = 1'-0"



POWER PLAN
OPERATIONS BUILDING - UPPER FLOOR
SCALE: 1/4" = 1'-0"



POWER PLAN
OPERATIONS BUILDING - BASEMENT
SCALE: 1/4" = 1'-0"

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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180 IRONHORSE COURT
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CHECKED: JRM
APPROVED: MLO

No.	REVISION	DATE	APP'D

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
POWER PLANS AND GROUNDING PLANS

SHEET: E-7
OF: 13
JOB NO.: 20859
DWG: C-00E-07

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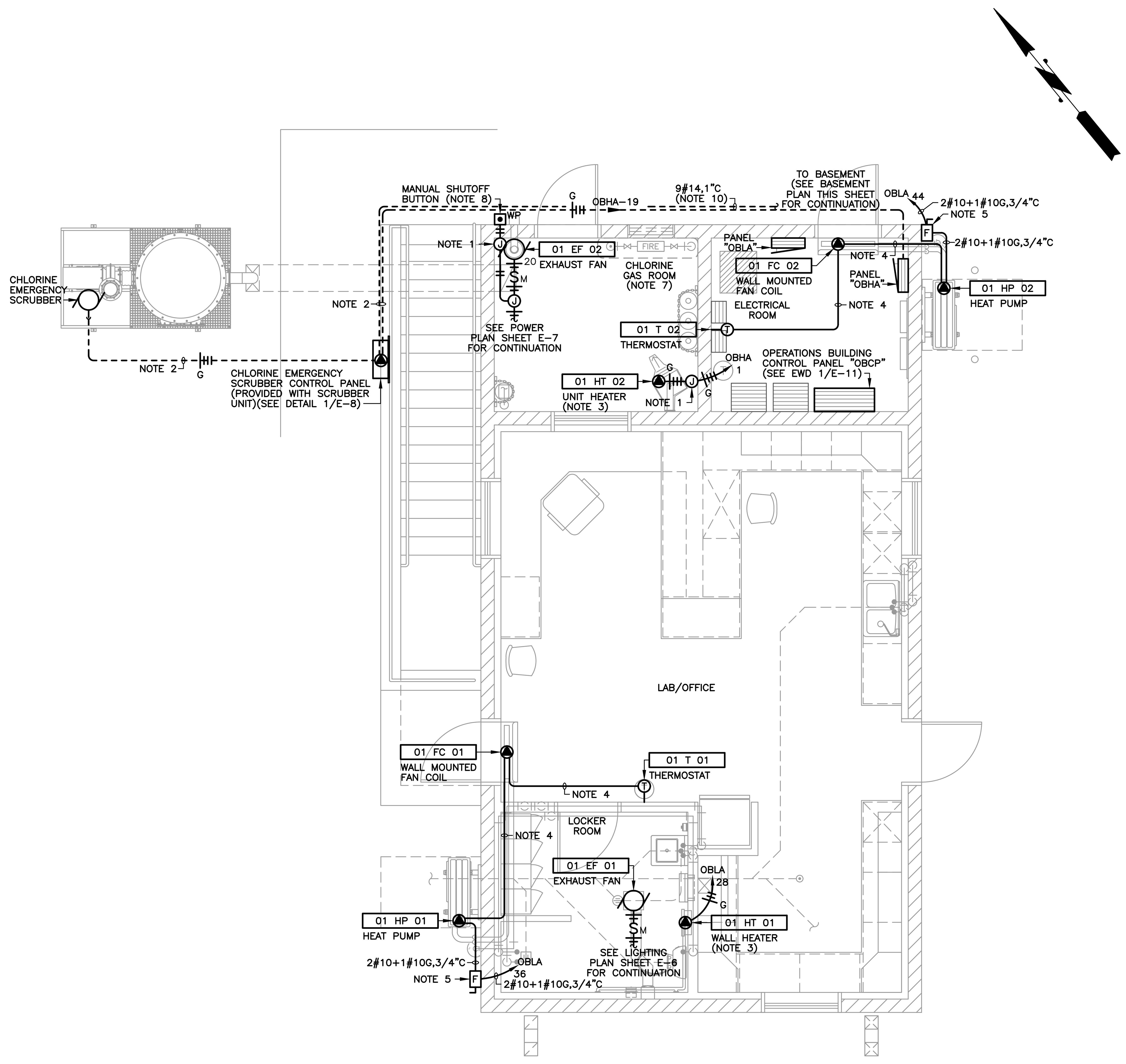
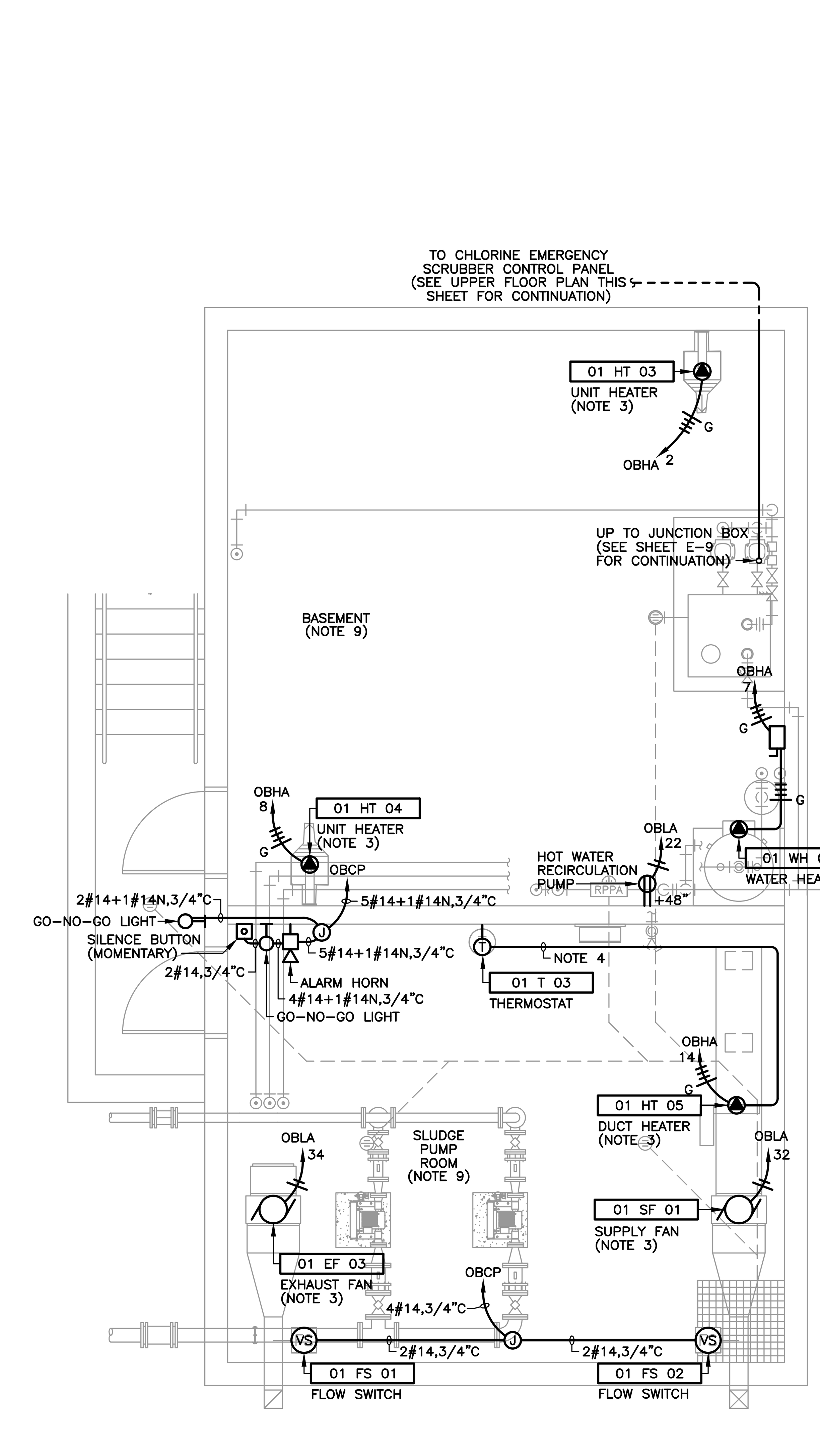
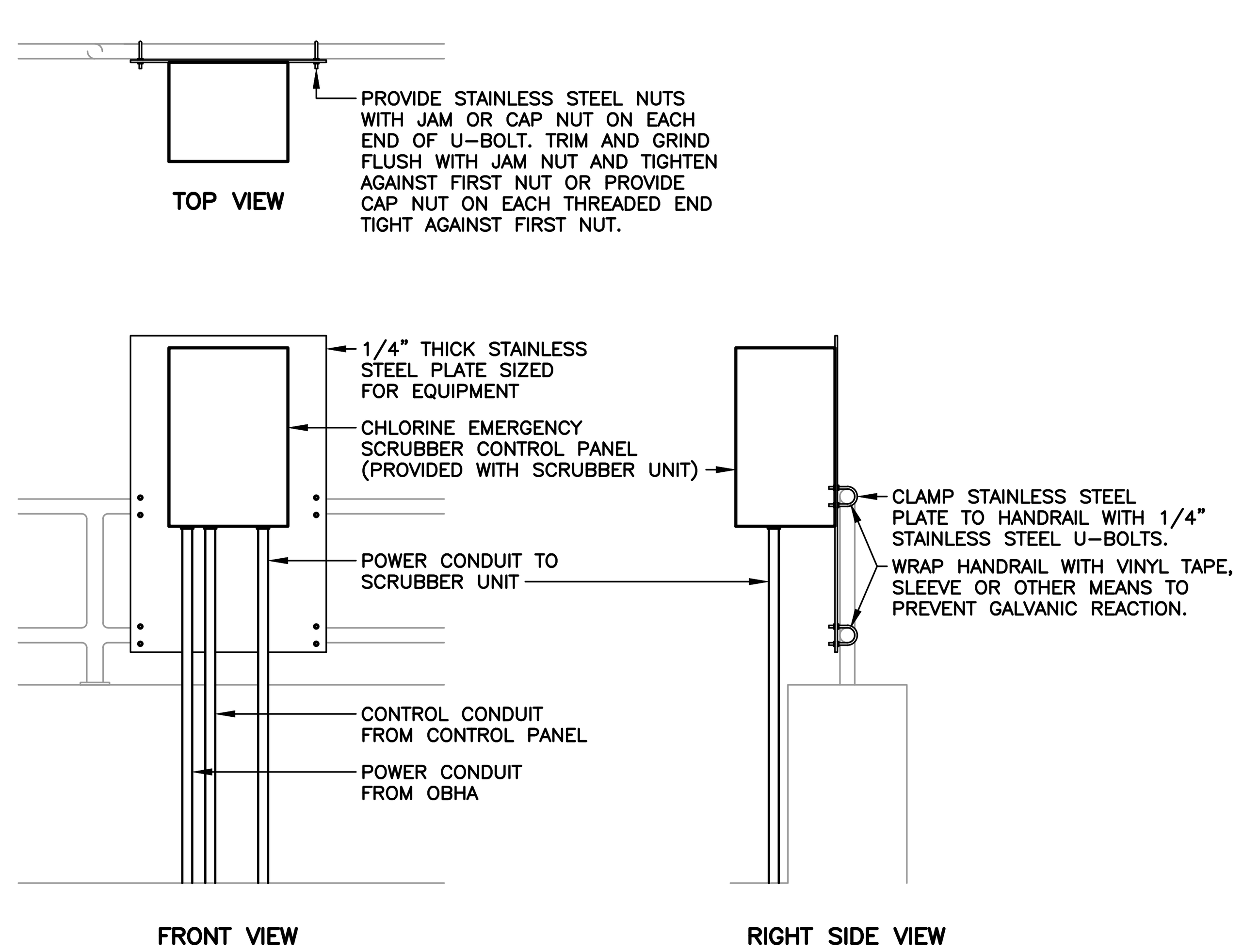


HVAC PLAN
OPERATIONS BUILDING - UPPER FLOOR
SCALE: 1/4" = 1'-0"
(NOTE 6)



HVAC PLAN
OPERATIONS BUILDING - BASEMENT
SCALE: 1/4" = 1'-0"
(NOTE 6)



DETAIL 1/E-8
CONTROL PANEL MOUNTING
SCALE: NONE

NOTES:

SEE SHEET E-1 FOR GENERAL NOTES.

1. PROVIDE SEALING COMPOUND (DUCT SEAL, ETC.) IN JUNCTION BOX AND ANNULAR SPACE AROUND CONDUIT PENETRATION TO PREVENT PASSAGE OF GAS FROM CHLORINATION ROOM. IT IS NOT ACCEPTABLE TO INSTALL ELECTRICAL DEVICES IN JUNCTION BOXES THAT HAVE SEALING COMPOUNDS INSTALLED. ELECTRICAL DEVICES MUST BE INSTALLED IN DEVICE BOXES THAT ARE SEPARATE FROM JUNCTION BOXES USED FOR INSTALLATION OF SEALING COMPOUNDS.
2. SEE DETAIL 1/E-3 FOR TRENCHING REQUIREMENTS.
3. INTEGRAL DISCONNECTING MEANS SPECIFIED UNDER DIVISION 15. SEE MECHANICAL DRAWINGS FOR FURTHER INFORMATION.
4. PROVIDE MANUFACTURER'S RECOMMENDED CONDUCTORS IN 3/4" MINIMUM CONDUIT.
5. PROVIDE 2P-30A, NEMA 3R, HEAVY DUTY FUSED DISCONNECT. SIZE FUSES PER HVAC EQUIPMENT MANUFACTURER'S RECOMMENDATIONS FOR ACTUAL HVAC EQUIPMENT PROVIDED ON SITE.
6. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT AND ELECTRICAL CONNECTIONS ON EQUIPMENT WITH MECHANICAL EQUIPMENT INSTALLER AND MECHANICAL SUBMITTAL DRAWINGS PRIOR TO DEVICE ROUGH-IN.
7. HVAC EQUIPMENT SHALL BE INSTALLED EXPOSED. POWER CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILING. ROUTE CONDUITS EXPOSED VERTICALLY FROM THE CEILING DOWN TO THE DEVICES OR EQUIPMENT MOUNTED ON THE WALLS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.
8. PROVIDE HELD EMERGENCY PUSH BUTTON CONNECTED SUCH THAT FAN IS OFF WHEN PUSHED. MANUFACTURER LABEL TO READ AS FOLLOWS, "VENTILATION SYSTEM EMERGENCY SHUTOFF."
9. POWER EQUIPMENT SHALL BE INSTALLED EXPOSED ON WALL IN THIS ROOM. POWER CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILINGS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.
10. THE NUMBER OF CONDUCTORS MAY VARY BASED ON MANUFACTURER'S REQUIREMENTS OF ACTUAL EQUIPMENT PROVIDED.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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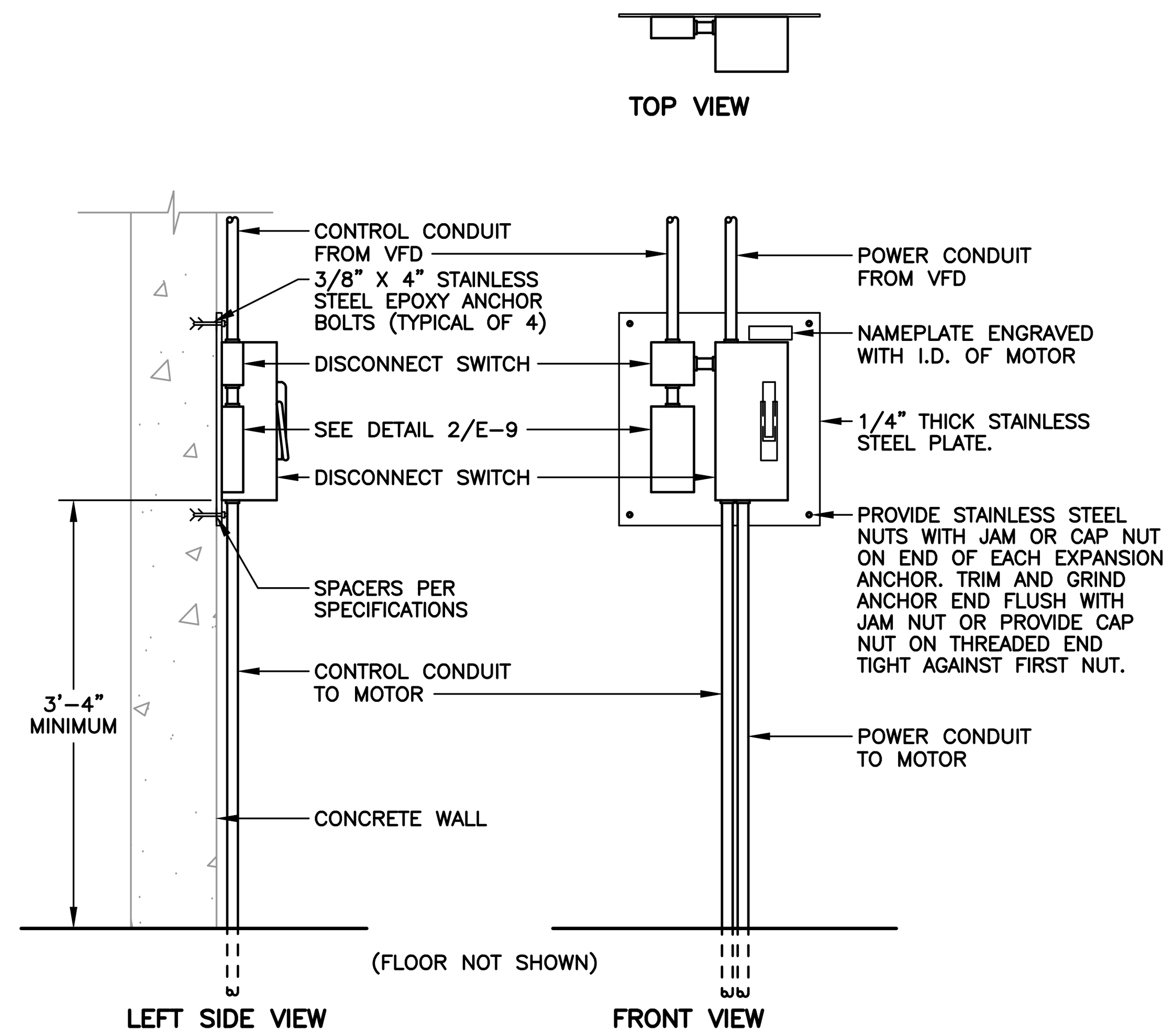
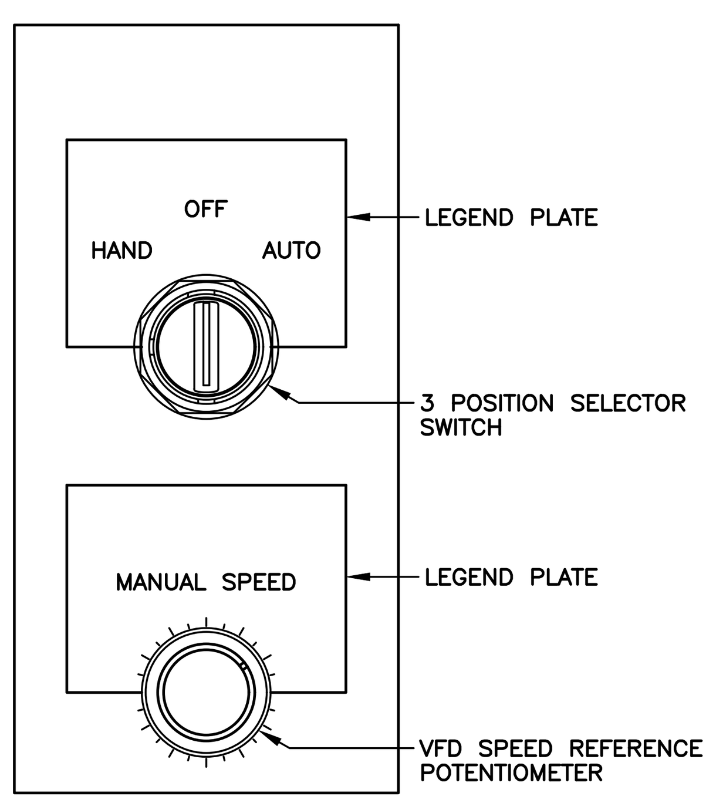
CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
HVAC PLANS

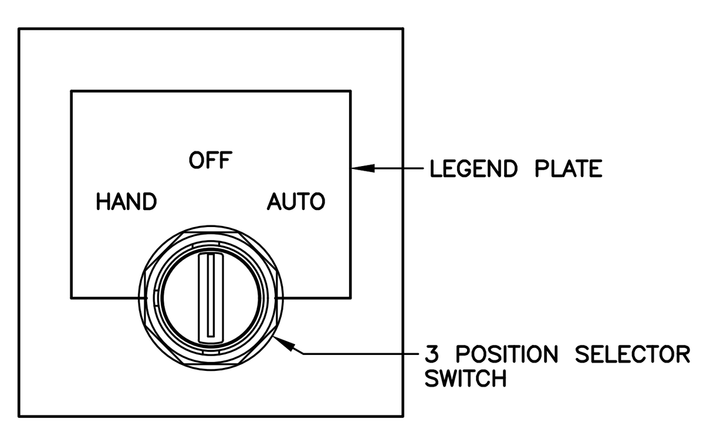
SHEET: E-8
OF: 13
JOB NO.: 20859
DWG: C-00E-08



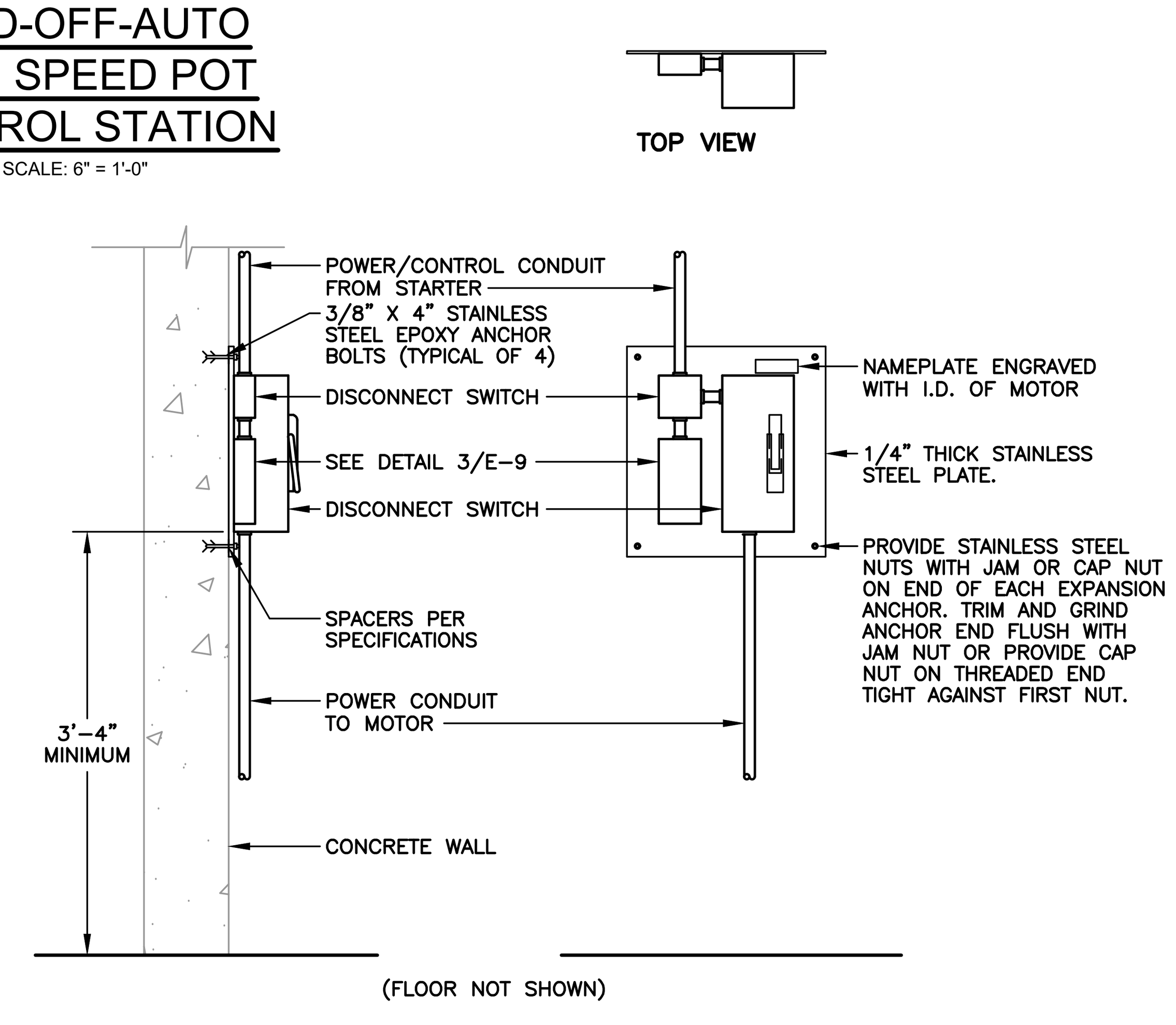
DETAIL 1/E-9
DISCONNECT/CONTROL STATION MOUNTING
SCALE: NONE



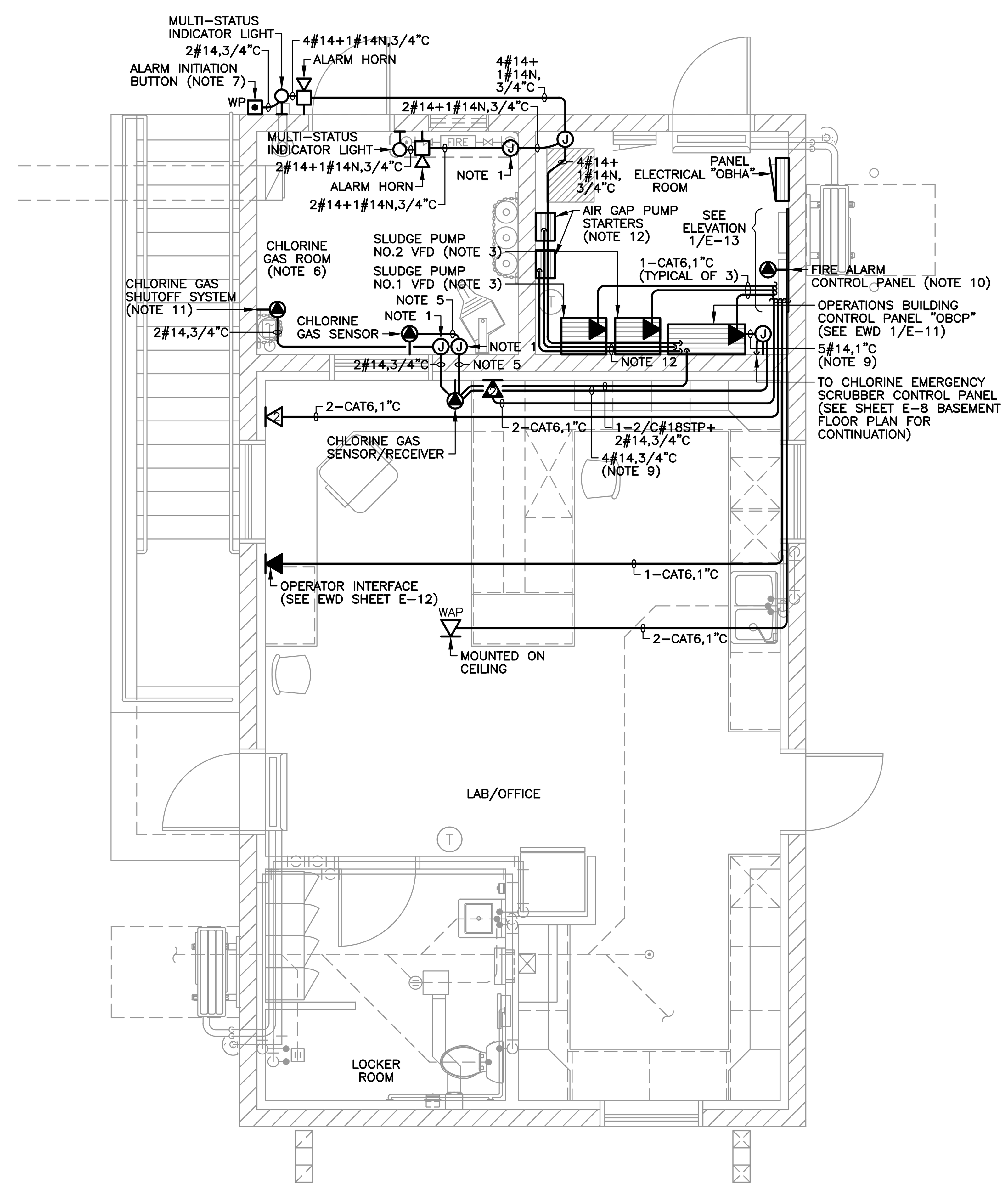
DETAIL 2/E-9
HAND-OFF-AUTO
WITH SPEED POT
CONTROL STATION
SCALE: 6" = 1'-0"



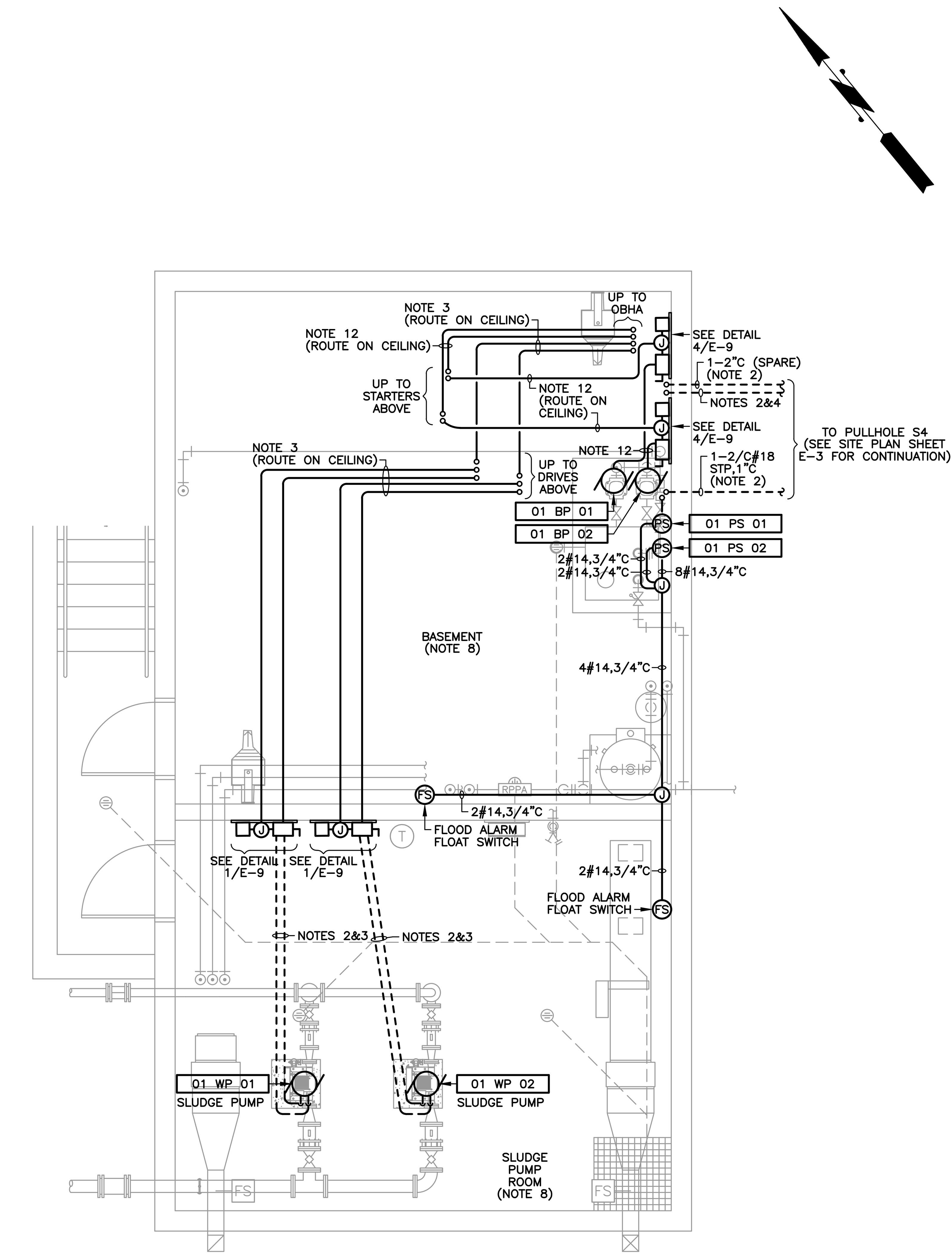
DETAIL 3/E-9
HAND-OFF-AUTO
CONTROL STATION
SCALE: 6" = 1'-0"



DETAIL 4/E-9
DISCONNECT/CONTROL STATION MOUNTING
SCALE: NONE



PROCESS POWER AND INSTRUMENTATION PLAN
OPERATIONS BUILDING - UPPER FLOOR
SCALE: 1/4" = 1'-0"



PROCESS POWER AND INSTRUMENTATION PLAN
OPERATIONS BUILDING - BASEMENT
SCALE: 1/4" = 1'-0"

NOTES:

SEE SHEET E-1 FOR GENERAL NOTES.

1. PROVIDE SEALING COMPOUND (DUCT SEAL, ETC.) IN JUNCTION BOX AND ANNULAR SPACE AROUND CONDUIT PENETRATION TO PREVENT PASSAGE OF GAS FROM CHLORINATION ROOM. IT IS NOT ACCEPTABLE TO INSTALL ELECTRICAL DEVICES IN JUNCTION BOXES THAT HAVE SEALING COMPOUNDS INSTALLED. ELECTRICAL DEVICES MUST BE INSTALLED IN DEVICE BOXES THAT ARE SEPARATE FROM JUNCTION BOXES USED FOR INSTALLATION OF SEALING COMPOUNDS.
2. SEE DETAIL 1/E-1 FOR TRENCHING REQUIREMENTS.
3. SEE SLUDGE PUMP ONE LINE DIAGRAM SHEET E-10 FOR CIRCUIT AND EQUIPMENT INFORMATION.
4. SEE BLOCK DIAGRAM COMMUNICATIONS SYSTEM SHEET E-13 FOR CIRCUIT AND EQUIPMENT INFORMATION.
5. PROVIDE MANUFACTURER'S RECOMMENDED CONDUCTORS IN 3/4" MINIMUM CONDUIT.
6. DEVICES SHALL BE INSTALLED EXPOSED ON WALL. CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILING. ROUTE CONDUITS EXPOSED VERTICALLY FROM THE CEILING DOWN TO THE DEVICES OR EQUIPMENT MOUNTED ON THE WALLS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.
7. PROVIDE HELD EMERGENCY PUSH BUTTON. PROVIDE PHENOLIC NAMEPLATE WITH 1" HIGH TEXT ENGRAVED TO READ AS FOLLOWS, "CHLORINE GAS ALARM."
8. DEVICES SHALL BE INSTALLED EXPOSED ON WALL IN THIS ROOM. CIRCUITS SHALL BE INSTALLED EXPOSED ON WALLS AND CEILINGS. IT IS NOT ACCEPTABLE TO ROUTE EXPOSED CONDUIT HORIZONTALLY ON WALLS.
9. THE NUMBER OF CONDUCTORS MAY VARY BASED ON MANUFACTURER'S REQUIREMENTS OF ACTUAL EQUIPMENT PROVIDED.
10. PROVIDE CONDUIT AND CONDUCTORS FOR FIRE ALARM SYSTEM PER SECTION 15300. BIDDERS SHOULD PROVIDE FOR ONE DETECTOR, ONE PULL STATION, ONE HORN/STROBE IN THE CHLORINE GAS ROOM, ONE HORN/STROBE OUTSIDE THE CHLORINE GAS ROOM, AND ONE PULL STATION AT THE FIRE ALARM CONTROL PANEL.
11. INSTALL ELECTRICAL COMPONENTS OF CHLORINE GAS SHUTOFF SYSTEM PER MANUFACTURER'S REQUIREMENTS. PROVIDE ALL INTERCONNECTING WIRING AND CONNECTION TO DEVICES AND EQUIPMENT INCLUDING CONTROLLER, SHUTOFF SWITCH, AND ACTUATOR.
12. SEE AIR GAP PUMP ONE LINE DIAGRAMS AND ELEMENTARY WIRING DIAGRAMS SHEET E-10 FOR CIRCUIT AND EQUIPMENT INFORMATION.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
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YAKIMA, WA 98901 • (509) 453-4833

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APPROVED: MLO

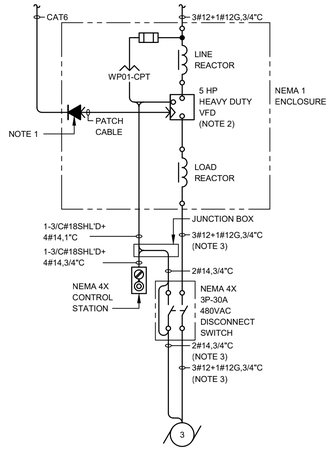
No.	REVISION	DATE	APPD

MATTHEW L. OBERG, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
PROCESS POWER AND INSTRUMENTATION PLANS

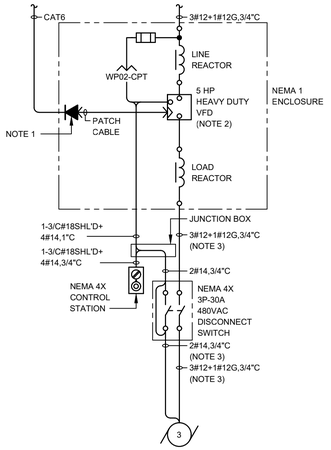
SHEET: E-9
OF: 13
JOB NO.: 20859
DWG: C-00E-09

Z:\JOBS\G&O\Y\20859\Cad\C-00E-09.dwg, 10/8/2021 9:44 AM, THEODORE H. PALMATIER



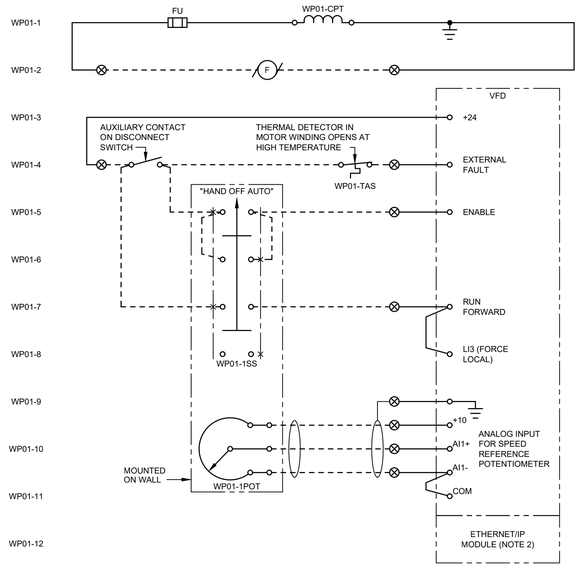
OLD 1/E-10
SLUDGE PUMP NO. 1
(WP 01)

SCALE: NONE



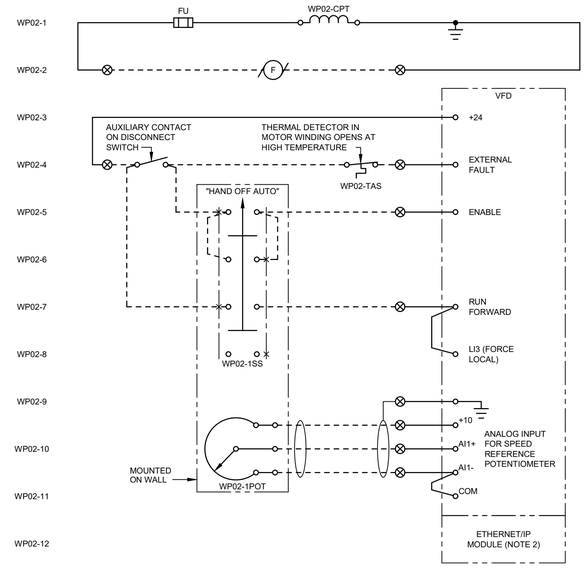
OLD 1/E-10
SLUDGE PUMP NO. 2
(WP 02)

SCALE: NONE



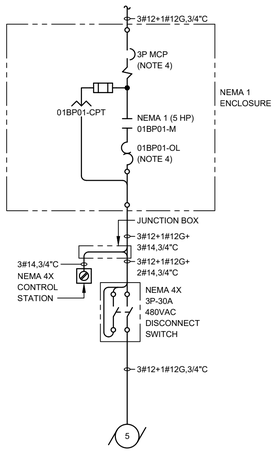
EWD 1/E-10
SLUDGE PUMP NO. 1
(WP 01)

SCALE: NONE



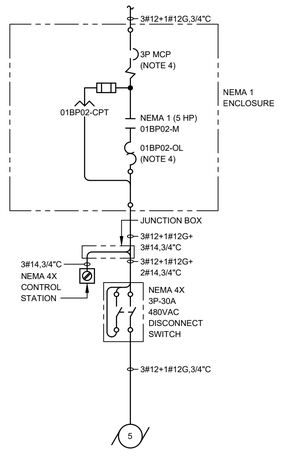
EWD 1/E-10
SLUDGE PUMP NO. 2
(WP 02)

SCALE: NONE



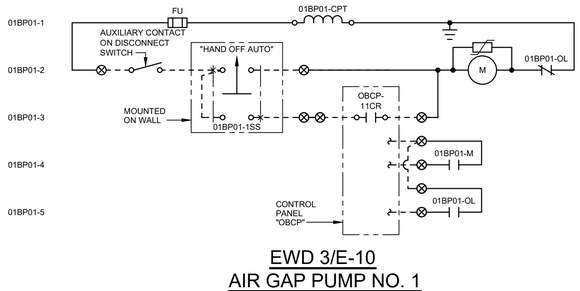
OLD 3/E-10
AIR GAP PUMP NO. 1
(01 BP 01)

SCALE: NONE



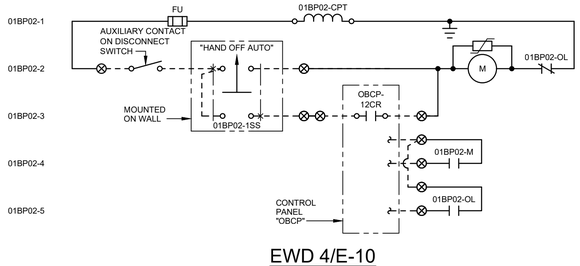
OLD 4/E-10
AIR GAP PUMP NO. 2
(01 BP 02)

SCALE: NONE



EWD 3/E-10
AIR GAP PUMP NO. 1
(01 BP 01)

SCALE: NONE



EWD 4/E-10
AIR GAP PUMP NO. 2
(01 BP 02)

SCALE: NONE

NOTES:

SEE DRAWING E-1 FOR GENERAL NOTES.

1. PROVIDE SURFACE MOUNT OUTLET DATA JACK FOR ETHERNET AND FIELD INSTALL INSIDE VFD ENCLOSURE.
2. PROVIDE VFD THAT ALLOWS CONTROL OVER ETHERNET/IP FROM A LOGIX 5000 PAC (PROGRAMMABLE AUTOMATION CONTROLLER). PROVIDE VFD OF SUFFICIENT RATING TO OPERATE A CONSTANT TORQUE LOAD WITH THE ACTUAL MOTOR FURNISHED WITH THE SUPPLIED EQUIPMENT.
3. PROVIDE PVC COATED RIGID METAL CONDUIT. PROVIDE LIQUID TYPE FLEXIBLE METAL CONDUIT AT THE MOTOR TERMINATION.
4. SIZE MOTOR CIRCUIT PROTECTOR AND MOTOR OVERLOAD TO PROTECT ACTUAL MOTOR FURNISHED WITH THE SUPPLIED EQUIPMENT.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS
180 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

DATE:	OCT 2021	CHECKED:	JRM
DRAWN:	THP	APPROVED:	THP

No.	REVISION	DATE	APPD

THEODORE H. PALMATIER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON

EMERGENCY FIRE RESPONSE SERVICES

SLUDGE PUMP ONE LINE AND ELEMENTARY WIRING DIAGRAMS

SHEET: **E-10**
OF: **13**

JOB NO.: 20859
DWG: C-00E-10

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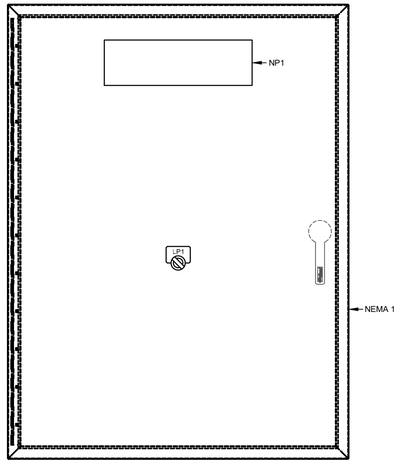
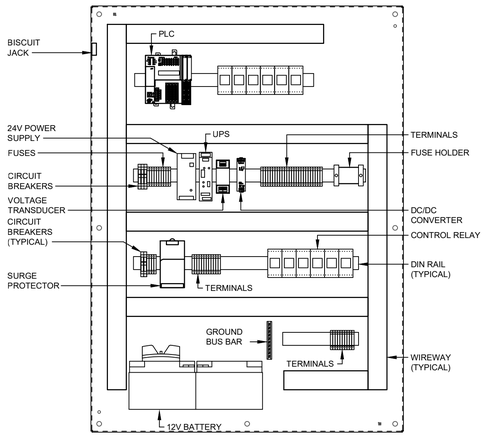


EXTERIOR ELEVATION

SCALE: 1 1/2" = 1'-0"



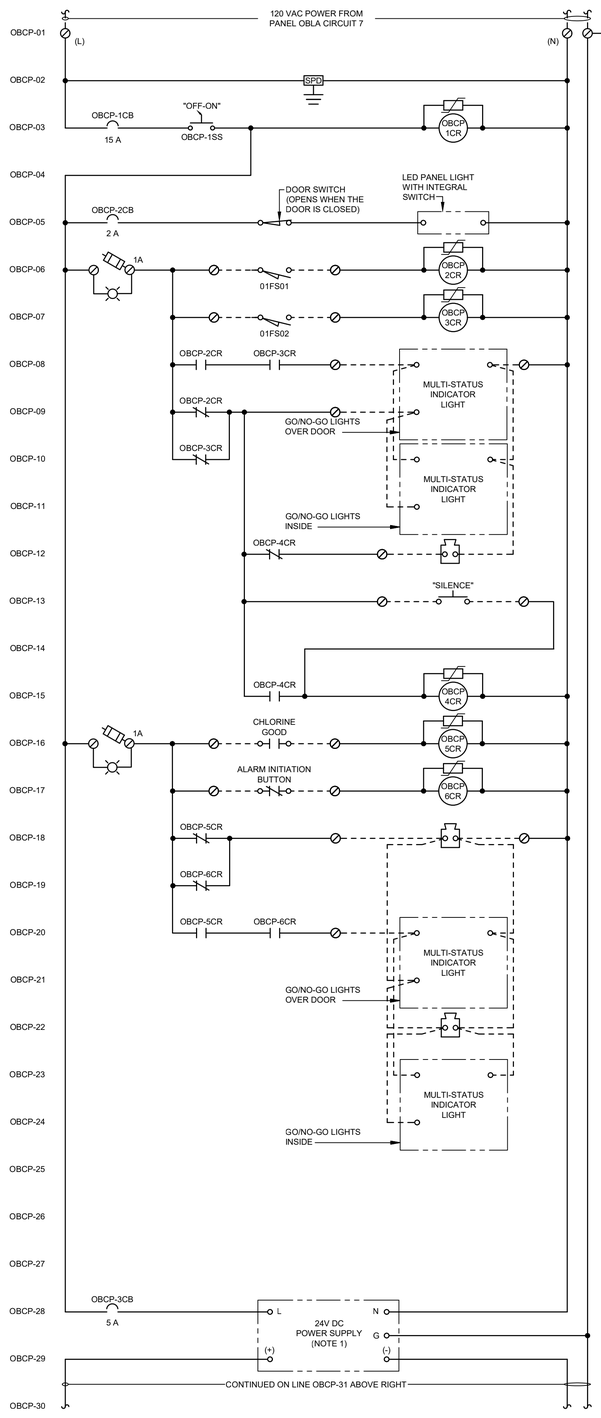
INTERIOR ELEVATION

SCALE: 1 1/2" = 1'-0"

DEVICE	LEGEND PLATE AND NAMEPLATE ENGRAVING
NP1	OPERATIONS BUILDING CONTROL PANEL
LP1	ON-OFF

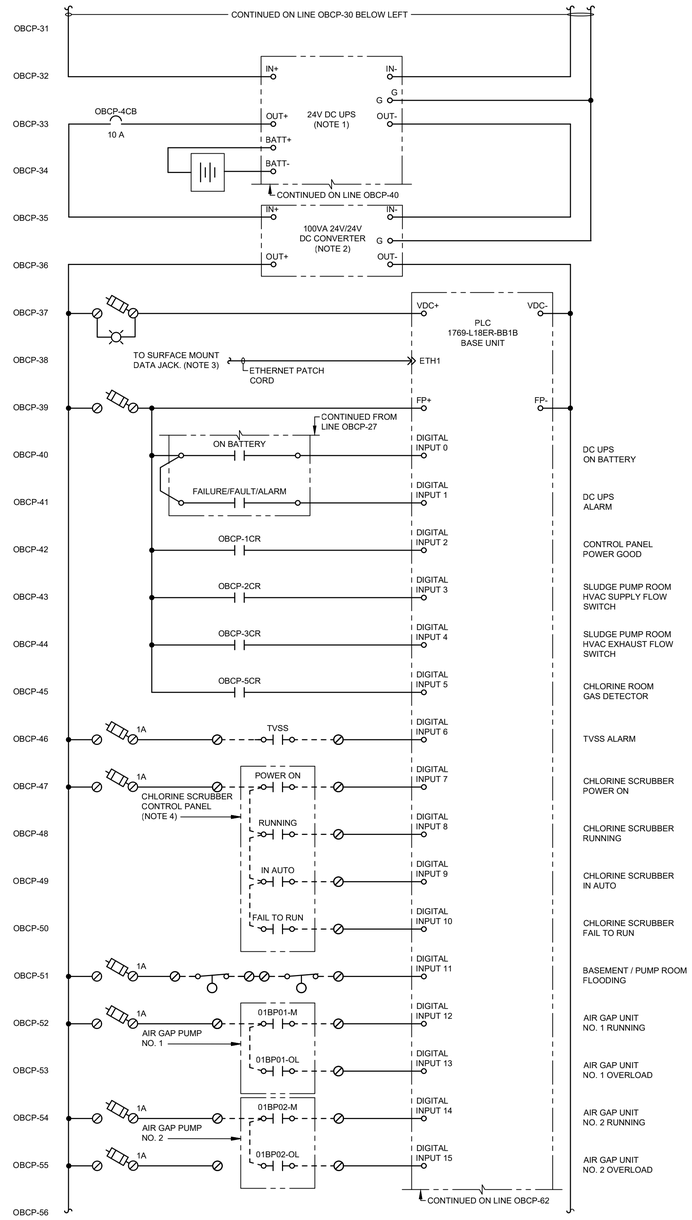
LEGEND PLATE AND NAMEPLATE SCHEDULE

SCALE: NONE



OPERATIONS BUILDING CONTROL PANEL "OBCP"

SCALE: NONE



NOTES:

1. A BATTERY CHARGER WITH A DC OUTPUT MAY BE SUPPLIED IN LIEU OF THE POWER SUPPLY AND DC UPS. THE NOMINAL OUTPUT SHALL BE 12 VDC OR 24 VDC.
2. THE DC / DC CONVERTER INPUT RATING SHALL BE MATCHED TO THE VOLTAGE PROVIDED AT THE INPUT. THE CONVERTER MAY BE OMITTED IF THE INPUT IS REGULATED AT 24 VDC.
3. PROVIDE SURFACE MOUNT OUTLET DATA JACK FOR ETHERNET AND FIELD INSTALL INSIDE CONTROL PANEL.
4. THE CHLORINE SCRUBBER CONTROL PANEL IS SUPPLIED WITH THE CHLORINE SYSTEM.

0 1" 2"

TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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THEODORE H. PALMATIER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
OPERATIONS BUILDING CONTROL PANEL

SHEET: E-11
OF: 13
JOB NO.: 20859
DWG: C-00E-11

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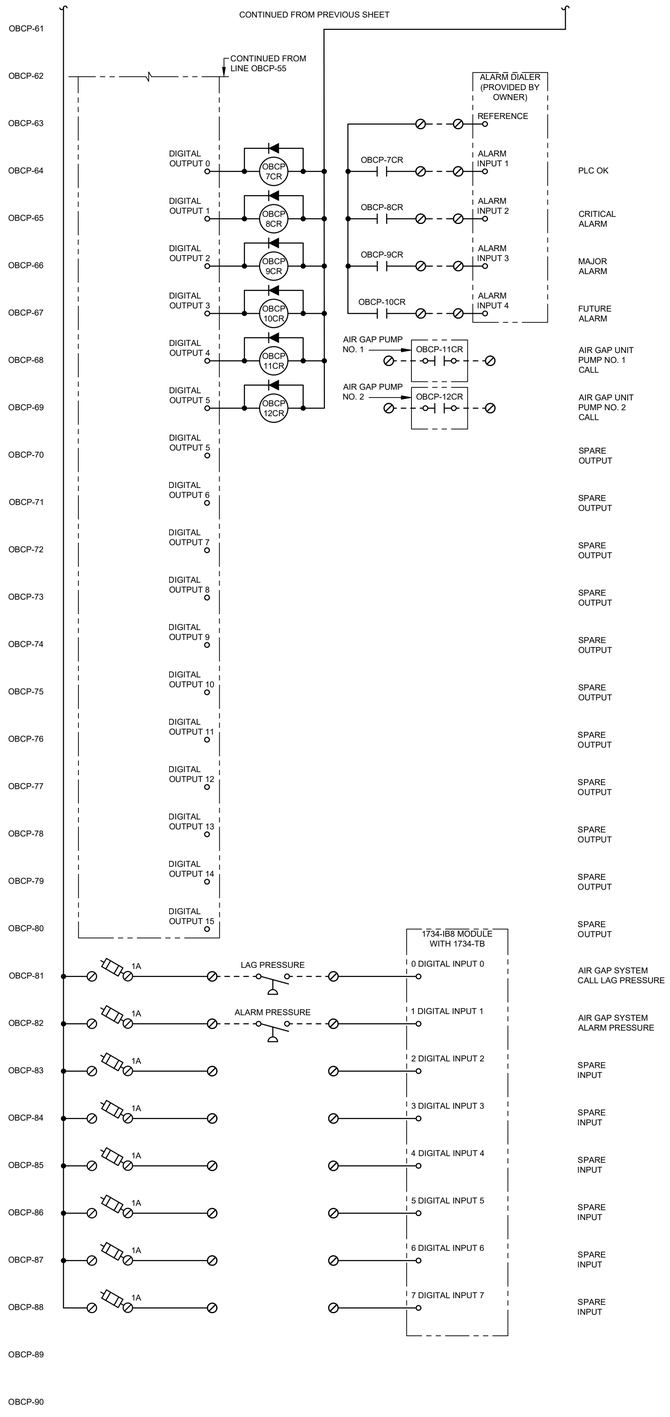
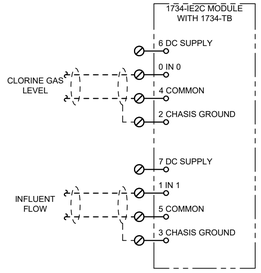
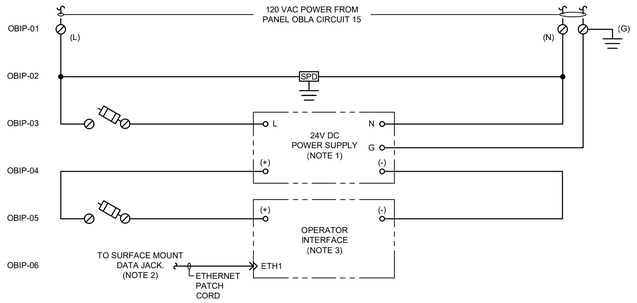


OPERATIONS BUILDING CONTROL PANEL "OBCP"

SCALE: NONE





OPERATOR INTERFACE ELEMENTARY WIRING DIAGRAM

SCALE: NONE
NOTE 4

NOTES:

1. PROVIDE A POWER SUPPLY SUITABLE FOR OPERATOR INTERFACE.
2. PROVIDE SURFACE MOUNT OUTLET DATA JACK FOR ETHERNET AND FIELD INSTALL INSIDE CONTROL PANEL.
3. PROVIDE RED LION CR1000 7" WIDESCREEN HMI WITH 2 SERIAL, 1 ETHERNET, USB DEVICE (PART CR1000070000210).
4. PROVIDE NEMA 12 CONTROL ENCLOSURE. MOUNT OPERATOR INTERFACE TO ENCLOSURE FRONT.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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YAKIMA, WA 98901 • (509) 453-4833

DATE:	DRAWN:	CHECKED:	APPROVED:
OCT 2021	THP	JRM	THP

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THEODORE H. PALMATIER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
OPERATIONS BUILDING CONTROL PANEL

SHEET: E-12
OF: 13
JOB NO.: 20859
DWG: C-00E-12

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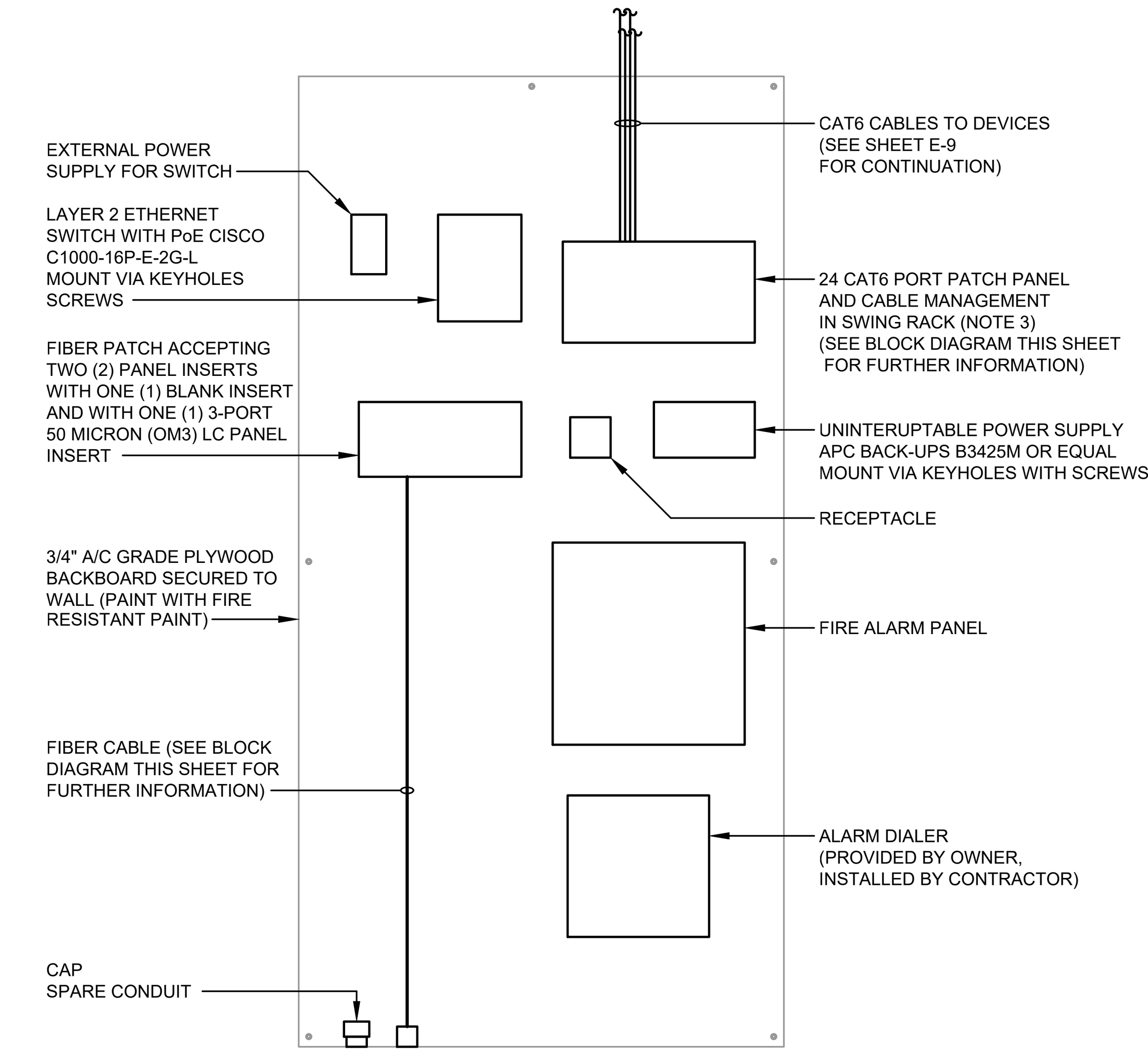
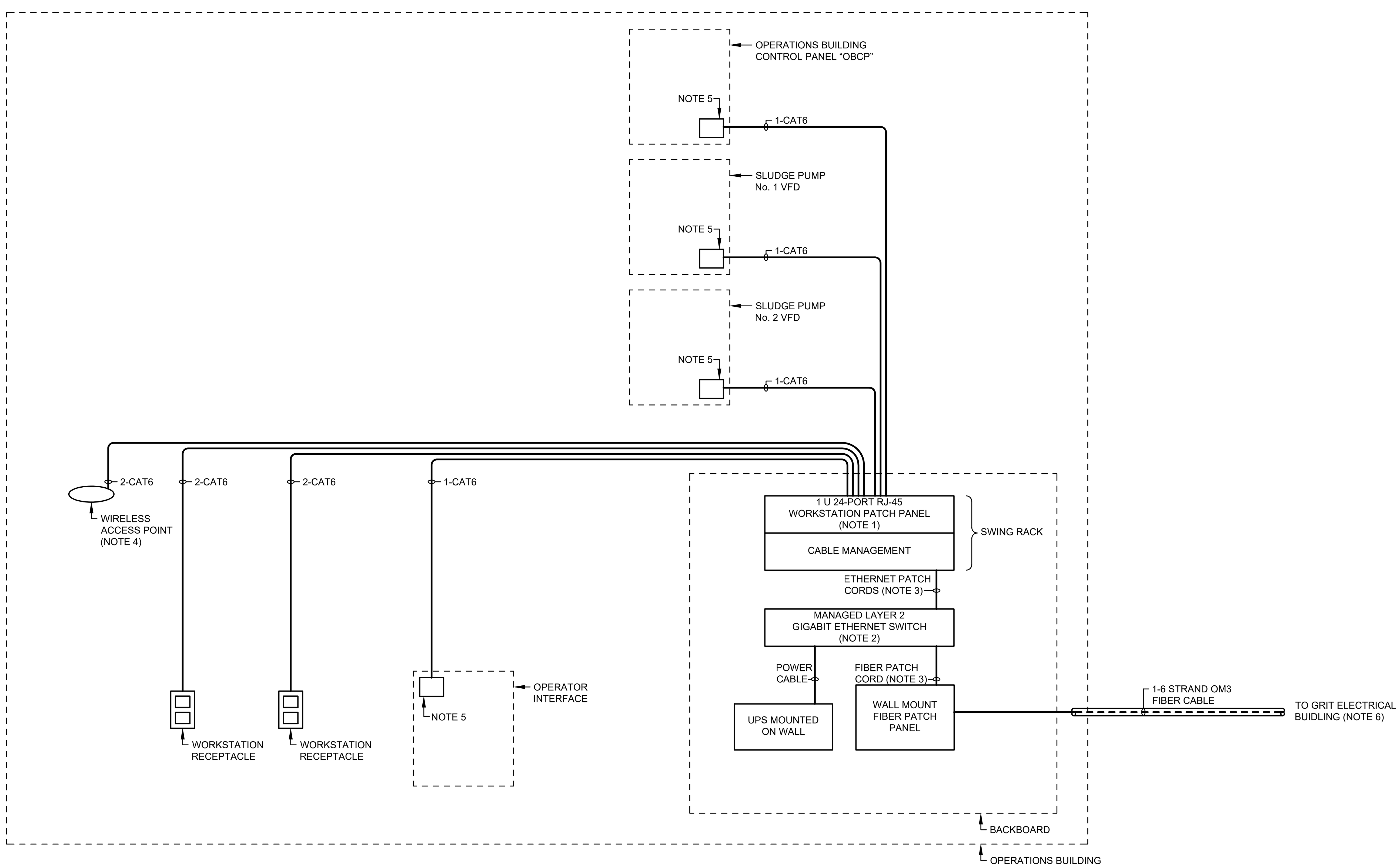


ELEVATION 1/E-13
COMMUNICATIONS BACKBOARD

SCALE: 3/4" = 1'-0"



BLOCK DIAGRAM
COMMUNICATIONS SYSTEM

SCALE: NONE

NOTES:

1. RACK MOUNTED WORKSTATION PATCH PANEL WITH ETHERENT DATA JACKS (RJ45) SUITABLE FOR CAT6 CABLE WITH 110 STYLE PUNCH DOWN BLOCKS.
2. GIGABIT ETHERENT SWITCH WITH SFP UPLINK MODULE. PoE PORT SUITABLE FOR WIRELESS ACCESS POINT.
3. PROVIDE AT LEAST ONE CAT6 PATCH CORD FOR EVERY COPPER ETHERNET PORT ON THE NETWORK SWITCH. PROVIDE AT LEAST TWO LC/LC OM3 PATCH CABLES. DETERMINE PATCH CORD LENGTH TO HAVE A MINIMUM OF 6 INCHES OF SLACK BUT NO MORE THAN 4 FEET OF SLACK.
4. ROUTE CAT6 CABLE TO DEVICE BOX. FIELD CONNECT RJ-45 JACKS AS REQUIRED TO CONNECT TO WIFI ACCESS POINT.
5. PROVIDE SURFACE MOUNT DATA JACK SUITABLE FOR ETHERNET CABLE WITH CAT6 CABLE. INSTALL THE JACK WITHIN THE ELECTRICAL ENCLOSURE IN THE SAME UNIT/COMPARTMENT/SECTION AS THE ITEM BEING CONNECTED TO ETHERNET.
6. INTERCEPT EXISTING CONDUIT AND EXTEND WITH NEW CONDUIT. PROVIDE NEW 6-STRAND OM3 FIBER CABLE FROM OPERATIONS BUILDING TO GRIT/ELECTRICAL BUILDING. REMOVE EXISTING FIBER CABLE FROM OPERATIONS BUILING TO GRIT/ELECTRICAL BUILDING. TERMINATE NEW CABLE IN GRIT/ELECTRICAL BUILDING TO MATCH EXISITNG CABLE (LC TERMINATIONS). SEE SITE PLAN, SHEET E-3 FOR ADDITIONAL INFORMATION.

0 1" 2"
TWO INCHES AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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130 IRONHORSE COURT
YAKIMA, WA 98901 • (509) 453-4833

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CITY OF BRIDGEPORT
DOUGLAS COUNTY WASHINGTON
EMERGENCY FIRE RESPONSE SERVICES
COMMUNICATIONS BLOCK DIAGRAM

SHEET: E-13
OF: 13
JOB NO.: 20859
DWG: C-00E-13